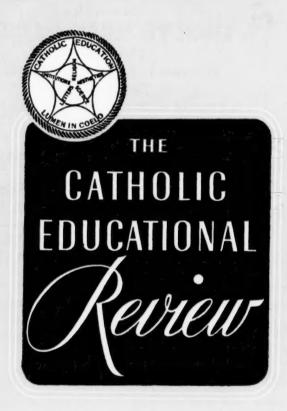
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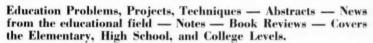
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PROCESS AND PRODUCT IN GENERALIZING

MOTHER MARGARET GUEST, R.S.C.J.*

The distinction is increasingly made between the products of learning and the process of learning. The products are the end-results of the learning: the skills and the information, and the understandings which are attained. By process is meant the way in which the learner achieves the knowledge and understanding which he seeks. It is his manner of seeking.

Studies of induction or concept formation are divided into: (1) those which lead to the formation of a concept applicable to a class of objects and (2) those which lead to the induction of a rule or principle applicable to a class of situations.1 It is to this latter class—that dealing with the conceptual formulation of general principles—that the present study belongs.

PURPOSE OF THE INVESTIGATION

The purpose of this investigation was to make an analytical study of the process by which a group of tenth-grade girls arrive at a general principle for the solution of a series of problems. A further purpose was to determine whether—or how the method of presentation of the learning materials influences the process. For this latter purpose three methods of presentation were employed: (1) simple verbal presentation; (2) flat picture, plus verbal explanation; and (3) concrete demonstration, plus verbal explanation. As the study proceeded, some related problems appeared and were investigated, as will be described below.

RELATED LITERATURE

A complete review of the literature, though important to a full understanding of the aims and results of the study, being

^{*}Mother Margaret Guest, R.S.C.J., Ph.D., is on the staff of the Department of Education at San Diego College for Women. This article is adapted from her doctoral dissertation completed at the University of California, Berkeley, in January, 1952.

1 R. S. Woodworth, Experimental Psychology (New York: Henry Holt

and Co., 1938), chaps. xxix and xxx.

impossible here, the following general description may suffice. It should be kept in mind that the reviewer's aim was to discover methods, or combinations of methods, suitable for use in investigating the activities of pupils when faced with the necessity or with the opportunity of forming concepts or general rules

with regard to classroom subject-matter.

Several possible bases for classification and comparison present themselves as one reads through the reports of investigations in this field. The point of view of the experimenter-"elementaristic," for example, Hull;2 "gestalt," for example, Smoke⁸—is seen to influence significantly the choice of material and procedure. In regard to procedure, the fundamental distinction is between the modified memory method as introduced by Hull4 and the classification or "sorting" method as described by Hanfmann and Kasanin-after Ach, Vigotsky, and others.5

Related to the matter of procedure is the necessary question of whether the learning of the experimental concepts is to be "directed" or "incidental." Very few of the experimenters whose studies have dealt with the classification of objects have given their subjects an explanation of the true nature of the task. In most cases, it has been presented as a task of memorizing nonsense names for specific objects. Hence, the learning of concepts has been incidental to the memory task. In most of the rule-induction, on the other hand, the intended conceptual nature of the task has been made clear to the subjects at the beginning of the learning period.

In regard to the material presentation of the concepts, there is the problem of degree of meaningfulness and of whether it shall be of a sort to lead to a term applicable to a class of objects or to the induction of a rule. Most investigators, faced with the necessity of kaleidoscoping conceptual activity to fit the exigencies of the laboratory, have resorted to the use of nonsense syllables and arbitrary associations. But, since conceptual activity is, in the fullest sense of the term, meaningful,

² Clark L. Hull, "Quantitative Aspects of the Evolution of Concepts," Psychological Monographs, XXXVIII, No. 2 (1920), 1-82.

³ Kenneth L. Smoke, "An Objective Study of Concept Formation," Psychological Monographs, XLII; No. 4 (1931-1932), 1-46.

⁴ Hull, op. cit.

⁵ E. Hanfmann and J. Kasanin, "A Method for the Study of Concept Formation," Journal of Psychology, III (1937), 521-540.

any attempt to arouse and to study such activity by means of situations which are properly devoid of integral meaning seems questionable.

Again, some investigators have attempted to infer the process from the end-result; that is, they have used the cross-sectional approach. Thus, Eskridge tested children of the fourth to the seventh grades for their knowledge of geographical terms,6 and Peterson tested children of the fifth to the twelfth grades for their ability to formulate a general rule for the solution of a series of problems.⁷ Both of these authors proposed, as a result of their respective investigations, certain generalizations designed to characterize growth of children in the knowledge and abilities studied over the period of years covered by the studies. mittedly, the information thus gleaned is of value to educators. but it is clear that the aspect of growth in mental process, or in concept formation, which is tapped by this approach differs widely from that which is isolated by the experimenter, who in a single laboratory period of approximately an hour, observes his subject progress from zero knowledge of the "concept" to mastery.

Another seemingly important differentiation among these investigations lies in the use or non-use (or type of use) of the protocol. Hull's study, published in 1920, represents an attempt to objectify completely the study of the thought processes. Such attempts have been criticized in many quarters, notably by Kohler8 and by Brownell.9 In point of fact, since an experiment by Ruger, 10 which preceded Hull's by ten years, there has been a steady increase in dependence upon having the subjects "think aloud."

Finally, the vast majority of these investigations have used

⁶ T. J. Eskridge, "Growth in Understanding of Geographic Terms in Grades IV to VIII," Duke University Research Studies in Education, No. 4 (Duke University Press, 1939).

⁷ G. M. Peterson, "An Empirical Study of the Ability to Generalize," Journal of General Psychology, VI (January, 1932), 90-114.

⁸ E. Heidbreder, Seven Psychologies (New York: D. Appleton-Century Co. 1932), 2009.

Co., 1933), p. 366.

⁹ W. A. Brownell, "Problem Solving," The Psychology of Learning, Forty-first Yearbook of the National Society for the Study of Education,

Part II (Chicago: University of Chicago Press, 1942), pp. 418-419.

10 H. A. Ruger, "The Psychology of Efficiency," Archives of Psychology, II, No. 15 (June, 1910), 1-88.

adult subjects, have been carried on in laboratory situations, and have made use of materials bearing very little resemblance to any subject-matter of the classroom.

THE EXPERIMENT

Thirty-six tenth-grade girls were studied in an individual learning-testing situation designed to reveal how they attempted to educe a general rule for the solution of problems involving the "law of moments." A quiet classroom was used as a laboratory; none of the girls had studied physics. All were pre-tested to make certain that they were unfamiliar with the type of problem to be presented and that they did not know the principle involved. Three comparable series of twenty problems each were presented by each of the three methods already named.¹¹ Each pupil was directed to try to find and to verbalize a general rule by which all the problems in a series could be solved. Rotation, determined by scores on the California Test of Mental Maturity, made posisble a maximum number of scores, thirty-six, for each method of presentation. Each subject's total of correct answers to the problems (problem score) was treated as the "product" of thinking.

The "think-aloud" technique and wire recordings were utilized to tap the "process" of thinking. The study thus yielded both quantitative and qualitative data, which required statistical and qualitative analyses, respectively. A combination of these two approaches was made possible by the "levels of generalization," a concept which grew out of a pilot study, and which was investigated rather fully in the main study and utilized to part-score steps in the process of thinking. It is this concept which will be most emphasized in the present article. The purely qualitative analysis will be omitted.

LEVELS OF GENERALIZATION

The preliminary trial of the generalization materials, using fifth-grade girls as subjects, revealed that when the children were faced with the necessity of solving series of problems involving three aspects of the "law of moments" (first-class lever, inclined plane, wheel-and-axle), they tended to evolve and em-

¹¹ Examples of the problems are given below.

ploy various principles more elementary in form and more limited in scope than the law of moments. All of these "lower-level" generalizations were restricted, that is, no one of them could be used to solve all the problems in a series. For instance, in the case of the generalization, "When the lighter weight is one-half as heavy as the heavier weight, it must be placed twice as far from the fulcrum," only those problems could be solved which were in the ratio of 2 to 1.

Four such generalizations were discriminated in the results of the preliminary trial. Dr. Lenzen, of the University of California Physics Department, verified the experimenter's deduction that they fell at varying levels on a scale of insight into the physics involved. This finding suggests the possibility of partscoring the steps that a pupil is able to take in the process of solving a problem, instead of the abortive "correct" or "incorrect" scoring of the product. To quote Allison Davis: "Some pupils who 'fail' have done much toward solution, other who fail will fail even after training."12

PRODUCT MEASURES

Effectiveness of method of presentation.—It will be recalled that each series of problems contained twenty problems. A perfect score for a pupil using any one method was, therefore, 20. Each of the thirty-six subjects did a series by each of the three methods, according to the rotation previously mentioned. Comparing the three methods of presentation for the problem scores made by the pupils, the verbal method gave results superior to those of the pictorial and of the concrete method. The mean problem score made by the verbal method exceeded that of the concrete method by 1.84 problems. A formula approved by Garrett was employed to determine the sigma of the difference of the means.13 The critical ratio of 1.8 obtained shows that the chances are 96 in 100 that the obtained difference is statistically significant. When the pictorial and concrete methods were compared, it was found that the mean score made by the pictorial method was higher by 1.42 problems. In this instance,

Longmans, Green and Co., 1937), p. 218.

Allison Davis, Social Class Influences Upon Learning (Cambridge, Mass.: Harvard University Press, 1948), p. 57.
 H. E. Garrett, Statistics in Psychology and Education (New York:

the critical ratio was 1.57. This, as in the case of the verbal and concrete methods, is too small to insure significant superiority, but is large enough to permit the assumption that the indicated superiority is quite probable.

The difference between the means of the verbal and the pictorial methods was so slight that no statistical comparison was

made.

Relationship between product measures and mental ability.— Mental age correlated .11 with the scores made by the thirty-six subjects on the first problem series attempted. However, when the subjects were classified into groups of less mentally mature (M.A. 16 and below) and more mentally mature (M.A. 17 and above) and a comparison made of mean problem scores for the three series of problems, results were more in keeping with theoretical expectation. The significance of the mean difference of fourteen problems was tested by a formula adapted to the small and unequal numbers of students, 14 and "t" was found to be 2.7, very close to the .01 level of confidence.

Results very similar were obtained when small groups contrasted on the basis of I.Q. were studied in the same way.

It seems safe to conclude, therefore, that there is a real difference in the generalizing ability (as here considered) of such groups.

PROCESS MEASURES

Evolution of the scale.—As has been mentioned, the levels

TABLE 1
RELATION BETWEEN MENTAL AGE AND TOTAL PROBLEM SCORE

	M.A. 16 and below	M.A. 17 and above
N	15	10
M	33.3*	47.3*
S.D.	13.25	9.94
Diff.		14.0
S.E.M1-M2		5.1209
1		2.7
P		.013

^{*}Possible total score for the three series was 60.

¹⁴ F. E. Croxton and D. J. Cowden, Applied General Statistics (New York: Prentice-Hall, Inc., 1939), p. 322.

of generalization arose out of the results of a preliminary study with fifth-grade girls. The four generalizations made use of by these fifteen children were as follows:

1. A heavier weight must be placed closer to the fulcrum than a lighter weight, and vice versa.

2. Equal weights must be placed at equal distances from the fulcrum.

3. When one of the weights is half as heavy as the other weight, it must be placed twice as far from the fulcrum as that other weight. Also, when one of the weights is one-third as heavy as the other weight, it must be placed three times as far from the fulcrum as that other weight, and so on. (The recognition of these simple fractional relationships in some cases led to evolution of various formulae, for example: "Divide the larger weight by the smaller one, then divide the given distance by that answer." In no case did these younger children use such a formula when its use involved fractions, that is, when one factor would not "go into" another evenly.)

4. The product of the weight and the distance on one side of the fulcrum must equal the product of the weight and the distance on the other side.

With regard to the fourth generalization, the "law of moments," only two of the fifth-grade children achieved this level. Both cases occurred at the blackboard, which was used for the pictorial presentation with these children. The "distance" numbers were indicated on a sketched lever (wheel, in one case). On the given distance a sketched weight also bore a large number. The "to be placed" weight was sketched at one side, also clearly marked with a number. When the child indicated the number of the "to be found" distance (or when it had been supplied by the experimenter), the "to be placed" weight was sketched on the lever at that point and the number of its weight written in large figures upon it. This close juxtaposition of large numbers may have created an over-simplified situation. Discovery by one of the children was sudden and certain: "Oh, this times this (weight times distance on one side of the fulcrum) is sixteen, and this times this (weight times distance on the other side) is sixteen. They're both the same, so they have to balance!" The second child was not so confident in her manner of expressing her discovery: "Could it be because three times eight is twenty-four and four times six is twenty-four, and it's the same on both sides; so, of course, it balances?" Trial on subsequent problems proved to both children that this was "the right way to do it." ("What" times the "to be placed" weight

equals the product of the other two factors?)

The first two generalizations in the list above had been placed in that order because it was felt that the first, since it does not yield a numerical answer to a problem, must be, therefore, of a lower level than the second which does yield a numerical answer in a single type of problem. When this list was submitted to Dr. Lenzen, however, he reversed the order of these two levels for the reason that the one requires more physical insight than the other.¹⁵

Experimental scale.—The data gathered from the experimental group of tenth-grade girls resulted in a scale of levels of generalization almost identical with the one just described. In the case of the second level, it is an interesting fact, that though none of the problems in the experimental series employed equal weights (This is precluded in the wheel and the plane series by the nature of the apparatus, and the three series were made as similar as possible.), some of the subjects employed this level

in the process of reasoning to higher levels.

In the case of the third level, it was found that the older girls also sometimes worked on this level, but they frequently was the "one-fourth" and more obscure fractional relationships, whereas the "one-third" had been the upper limit for the younger girls. The older girls recognized and verbalized mixed-number relationships, for example, "When one weight is two and a half times as large as the other, the smaller weight must be placed two and a half times as far from the fulcrum as the larger weight." Like the younger girls they also evolved formulae on the basis of these fractional relationships. Sometimes, however, they recognized and explicitly stated the inverse proportion involved in all of the problems. This explicit statement of proportion was taken to be a level of generalization above that of fractional relationships and implicit proportion (formulae) but

¹⁵ Ernst Mach, The Science of Mechanics, trans. Thomas J. McCormack (2d ed.; Chicago: Open Court Publishing Co., 1893), p. 8.

below that of the "law of moments." The highest level of generalization, as a result of the statements made by the older girls, was widened to include not only statements showing the equality of the products of weight and distance on each side of the fulcrum, but any objective formulation which indicated a clear knowledge that the numbers involved in the fundaments on each side of the fulcrum do equal each other. For example, "The weight and the distance on each side of the fulcrum reduce to ¼ and ¾, which cancel out, so the two sides are equal and they have to balance."

The scale of levels of generalization as it finally evolved from the data of the present study is as follows:

 Equal weights must be placed at equal distances from the fulcrum.

2. A heavier weight must be placed closer to the fulcrum than a lighter weight, and vice versa.

3. Inverse fractional relationships between weights and distances must be equal. Also, formulae arising out of this generalization.

4. Explicit inverse proportion.

Explicit verbal demonstration of the numerical equality of the two sides.

It seems advisable to offer at this point samples of the problems and of the levels of generalization as employed by the subjects. Because space is limited, the samples offered will be few and as concise as possible.

Levels 1 and 2.—Equal weights must be placed at equal distances from the fulcrum. A heavier weight must be placed closer to the fulcrum than a lighter weight; a lighter weight must be placed farther away from the fulcrum than a heavier weight. Subject; No. 11; I.Q.: 106. Series; Lever. Method: Concrete. Problem: No. 5. F=2 gr.; G.D.=9 in.; R=6 gr.; T.D.=? in. Response: "Two is on 9. Another 2 would go on this 9 (indicating a point 9 inches from the fulcrum on opposite side of

¹⁶ F indicates the force-weight; G.D., the given distance; R, the resistance-weight; T.D., the "to be found" distance from the fulcrum at which the resistance-weight is to be placed. Thus, the problem reads: If a 2-gram weight is placed 9 inches to the right of the fulcrum on a first-class lever, how many inches to the left side of the fulcrum should a 6-gram weight be placed so that the lever will balance?

fulcrum). Six weights more (than 2 grams), so put it nearer (the fulcrum) . . . on 3." (The last statement of this response is an example of the use of Level 2.)17

Level 3.-Inverse fractional relationships between weights and

distances must be equal.

Subject: No. 7. I.Q.: 118. Series: Lever. Method: Concrete. Problem: No. 20. F=2 gr.; G.D.=8 in.; R=4 gr.; T.D.=? in. Response: "When this (given weight) is half of this (to-be-placed weight), then this distance (under the to-be-placed weight) must be half of this distance (under the given weight). It's the same for thirds, and fourths, and all the fractions."

Level 4.—Explicit inverse proportion.

Subject: No. 3. I.Q.: 108. Series: Inclined Plane. Method: Verbal. Problem: No. 1. F=1 gr.; Length=20 in.; R=2 gr.; Height=? in. Response: "It should be 10 inches high because half of 20 is 10, and it sort of balances the 1 and 2. One is to 2 as 10 is to 20."

Level 5.—Explicit verbal demonstration of the numerical equality of the two sides.

Subject: No. 17. I.Q.: 104. Series: Lever. Method: Pictorial. Problem: No. 14. F=5 gr.; G.D.=8 in.; R=20 gr..; T.D.=? in. Response: "Eight times 5 is 40, divided by 20 is 2... Look, 5 times 8 is 40, and 2 times 20 is 40. They have to balance!" Problem: No. 20 F=2 gr.; G.D.=8 in.; R=4 gr.; T.D.=? in. Response: "The measure times the weight on one side has to equal the measure times the weight on the other side."

Method of presentation and highest level generalization.—Our first interest was, of course, to study the effect of method of presentation (concrete, pictorial, verbal) upon success in attaining a high level of generalization. Because the range of scores (highest level attained) is only from zero to five, the standard deviation is very large in comparison to the means, making it difficult to obtain statistical significance for the difference between the means.

In Table 2 it will be seen that the greatest mean difference was between the pictorial and the verbal mean scores, but this was very slight, just .17. Since the two distributions are based

¹⁷ Parenthetical inserts are the experimenter's own.

on the same thirty-six subjects, the standard error of this difference (.18) was reduced somewhat by a Pearson "r" of .69. Nevertheless, the critical ratio of .94 indicates that chances are 17 in 100 that there is no real superiority of the pictorial method over the verbal method in problems of this sort for the induction of high levels of generalization.

TABLE 2

DISTRIBUTION OF 36 SUBJECTS ACCORDING TO NUMBERS ATTAINING
EACH LEVEL OF GENERALIZATION BY EACH OF THREE METHODS
AND DATA FOR COMPARING PICTORIAL AND VERBAL METHODS

Level Attained	Concrete Method	Pictorial Method	Verbal Method
5	5	9	6
4	7	5	5
3	19	15	20
2	2	4	1
1	0	0	0
0	3	3	4
Totals	36	36	36
M	3.17	3.28	3.11
S.D. S.E.M		1.39	1.35
		.231	.225

Mental ability and success in generalization.—With a subject's degree of success in generalization defined, for the present purpose, as the highest level of generalization attained, the investigator sought to determine the relation between intelligence and such success. The Pearson product-moment coefficient of correlation calculated between the highest level of generalization attained by each subject on her first series of problems and her I.Q. score yielded an "r" of .28, which falls slightly below the .05 level of confidence. This "r" denotes a slight tendency for the more intelligent pupils to be successful in this type of problem more often than the less intelligent pupils.

When the product-moment coefficient of correlation was calculated between I.Q. scores and the highest level of generalization attained by each subject in solving three series (sixty problems), "r" was found to be .13. This reduced "r" might seem to indicate that additional experience tends to lessen the small initial advantage of the more intelligent over the less intelligent.

Because the obtained correlations are doubtless reduced in size as a consequence of the limited range of scores (92-126), it was decided to compute *chi*-square, using a two-by-two distribution. In the case of the relation between I.Q. and the highest level of generalization attained in the first trial, a *chi*-square of 5.11 was obtained, with a level of significance at .03. "C," in this case, was .35, which is 3 P.E.c removed from a "C" of .00. In other words, the *chi*-square procedure gives a somewhat larger measure of relationship than does the correlation coefficient.

In the case of the relation between I.Q. and the highest level of generalization attained in three trials, this method yielded a *chi*-square of 1.13, with a level of significance at .55. "C" was .17, which is 1.5 P.E.c removed from a "C" of .00.

When the definition of success in generalization was limited to attainment of Level 5, and a comparison of "low" and "high" intelligence groups was made in this respect, results were just about what the above "r's" would lead one to expect.

Table 3 shows a level of significance of "t" which indicates that chances are about 1 in 15 that there is a real difference between the two groups in their possibilities for success (as here defined) in this type of generalizing. In other words, there is no clear evidence of such a difference.

TABLE 3

RELATION BETWEEN MENTAL AGE AND SUCCESS IN ATTAINING
FIFTH LEVEL OF GENERALIZATION

Number of Series in Which Fifth Level Was Attained	Number of Pupils with M.A. of 16 and below	Number of Pupils with M.A. of 17 and above	
3	1	1	
2	0	1	
1	2	4	
0	12	4	
N	15	10	
M	.33	.90	
Diff.		.57	
S.E.M1-M2		.3635	
,		1.57	
P		.15	

Number of levels employed in process of solution.—One of the purposes of the study was to investigate the contention that the cultivation of a variety of hypotheses is an important factor in good thinking, as this may be applied to the subjects' use of

the levels of generalization. Table 4 puts forth data from contrasted ability groups in this regard. Reading in the table, one may see that two pupils of M.A. 16 or below used two or more levels of generalization in each of the three problem series. None of this mental age group used two or more levels

TABLE 4

COMPARISON OF LOW AND HIGH M.A. GROUPS FOR NUMBER
OF LEVELS OF GENERALIZATION USED

Number of Series in Which Two or More Levels Were Used	Number of Pupils with M.A. of 16 and below	Number of Pupil- with M.A. of 17 and above	
13	2	3	
2	0	5	
1	6	2	
0	7	0	
N	15	10	
M	.8	2.1	
Diff.		1.3	
S.E.M ₁ -M ₂		.3772	
1		3.448	
P		.006	

in only two of the three series, but six of these pupils used two or more levels in only one of the three series. The mean number of series in which two or more levels of generalization were used is seen to be 1.3 higher for the high mental age group than for the low group. Making use of the Croxton and Cowden formula mentioned above for the significance of the difference of means when numbers of subjects are small and unequal, we find the standard error of the difference to be .3772. The "t" is 3.45, which indicates a virtual certainty that between these two mental age groups there exists a real difference in the tendency to use more or less levels of generalization. That is, in verbalizing solutions to rule-induction problems of the sort used in this study, the more mentally mature use more levels of generalization than do the less mentally mature.

It was interesting to note that many of the subjects, having attained a generalization inductively by observing the "working" of a few problems, for example, that the heavier weight must be placed closer to the fulcrum than the lighter weight, thereafter made use of that generalization in a deductive manner to verify new and higher levels of generalization. For instance,

after attaining the generalization mentioned, a subject might devise a formula; but, before giving as the correct solution the answer yielded by the formula, she would go through a verbalized thought-process somewhat as follows: "I have to place a weight that is heavier than the one which is already placed on the lever. I know that the heavier weight must go closer to the fulcrum than the lighter one. Therefore, since the distance-number which I get by my new formula is less than the given distance-number, it is probably correct."

It has been shown that when problem score is taken as the measure of generalizing ability, it may be said that there is a very high probability of a real difference in this ability in favor of the higher mental age group. However, when levels of verbalized generalization are taken as the measure of generalizing ability, no clear-cut difference of a statistically significant nature can be shown between these two groups. This latter finding might be considered pedagogically a hopeful one. If intelligence is not the main issue in successful generalization, there arises the possibility of discovering what traits, techniques, or procedures do distinguish successful from unsuccessful generalizing.

The data of Table 4 indicate that there is a real difference in the number of levels of generalization used by the "low" and the "high" mental age groups. The high group used more levels. But this result does not tell us whether the individuals of the two groups were successful or unsuccessful in solving the generalization problems. It seems pertinent to investigate the relationship between success in generalization and the number of levels of generalization used.

When success was defined rigidly as the attainment of the fifth level of generalization in at least one of the three problem series, only six of the M.A.-17-and-above group were found in the successful group, three of the M.A.-16-and-below group were successful, and three of the subjects who were in the group between M.A.-16 and M.A.-17 were also in the successful group. Table 5 shows a comparison of this group of twelve pupils with a group of seventeen "unsuccessful" generalizers, those who did not exceed Level 3 in any of the three problem series. Reading in Table 5, it can be seen that none of the unsuccessful sub-

TABLE 5

RELATION BETWEEN SUCCESS IN GENERALIZATION AND NUMBER OF SERIES
IN WHICH TWO OR MORE LEVELS WERE USED

Number of Series in Which Two or More Levels Were Used	Number of "Unsuccessful" Subjects	Number of "Successful" Subjects
3	0	5
2	3	3
1	5	3
0	9	1
N	17	12
M.	.647	2.0
Diff.		1.353
S.E.MM.		.339
, , ,		4.0

jects used two or more levels in each of the three series of problems; three of this group used two or more levels in two of the three series; five of the same group used two or more levels in only one series, and nine of these unsuccessful subjects did not use two or more levels in any of the three problem series. The distribution of the successful subjects is seen to be in a reverse order of frequency: five of them used two or more levels in each of the three series, and so on. The mean number of series in which two or more levels were used by the successful group exceeds that of the unsuccessful group by 1.353. The standard error of this difference (by the Croxton and Cowden formula) is .339. The 't' is 4.0, one-third again as large as it needs to be for statistical significance.

Table 6 is read in the same way as Table 5. It compares the same two groups for number of problem series in which three or more levels of generalization were used. Here again, the ratio of the obtained difference to its standard error is much greater than it need be to insure that the superiority of the successful group in its use of numerous levels is statistically significant.

It would seem logical to conclude from these results that, though mental maturity (within the given range of I.Q.) may be a fairly important contributing factor in generalizing, pupils of "average" and "low" mental age may be successful generalizers by the use of the procedure described in the present section.

If successful generalization is marked by the use of more levels of generalization, in situations where such is possible, as

TABLE 6

RELATION BETWEEN SUCCESS IN GENERALIZATION AND NUMBER OF SERIES
IN WHICH THREE OR MORE LEVELS WERE USED

Number of Series in Which Three or More Levels Were Used	Number of "Unsuccessful" Subjects	Number of "Successful" Subjects
3	0	1
2	0	2
1	1	6
0	16	3
N	17	12
M	.0588	1.0830
Diff.		1.0242
5.E.M1-M2		.2
, , -		5.0

in the case of the problems used in this study, it would be helpful to know whether one of the three methods of presentation of learning materials is more conducive than the others to the employment of more than one level. Table 7 gives the number of levels of generalization used by all the subjects on each trial and by each method. The number of subjects on each trial by each method is twelve. The total number of subjects using

TABLE 7

NUMBER OF LEVELS OF GENERALIZATION USED BY 36 SUBJECTS
ON EACH TRIAL AND BY EACH METHOD

Trials	Concrete Method		Pictorial Method		Verbal Method	
	Number of Subjects	Number of Levels	Number of Subjects	Number of Levels	Number of Subjects	Number of Levels
First	12	22	12	13	12	17
Second	12	17	12	20	12	19
Third	12	16	12	22	12	20
Totals	36	55	36	55	36	56

each method is thirty-six. In the table, the similarity of the totals for each method is striking. Yet, the reverse order of frequencies between the concrete method and the other two methods, through the three trials, is interesting. The difference between the concrete and pictorial methods on the first trial, if shown to be significant, might conceivably indicate that initial presentation of learning materials in concrete form would pro-

mote earlier successful generalization. However, a statistical comparison of mean number of levels used on first trials by these two methods gave results which indicate that the difference may be due almost wholly to chance factors.

Sequential order of use of levels.—This is the final aspect of the data studied statistically. Table 8 compares successful and unsuccessful generalizers (defined as in Table 5) for the number of problem series in which they used two or more levels of generalization in ascending order, that is, from 1 to 5. Here we see that none of the unsuccessful group—those who did not attain Level 4 or 5 in any of the three problem series—used two or more levels of generalization in ascending order in each of the three series. None did this in two of the series; four of them did it in just one of the three series; thirteen of them did not use two or more levels of generalization in ascending

TABLE 8

RELATION BETWEEN SUCCESS IN GENERALIZATION AND THE ORDER OF USE OF THE LEVELS

Number of Series in Which Two or More Levels Were Used in Ascending Order	Number of Unsuccessful Subjects	Number of Successful Subjects	
3	0	1	
2	0	4	
1	4	4	
0	13	3	
N	17	12	
M	.235	1.25	
Diff.		1.015	
S.E.M ₁ -M ₂		.264	
, , ,		3.84	

order in any of the three series. The mean number of series in which two or more levels were used in this order differs for the two groups by 1.015 in favor of the successful group. The standard error of this difference is .264. The ratio of the obtained difference to its standard error is 3.84 ("t"). This "t" indicates virtual certainty that, when definite levels of generalization are available, the successful generalizers tend to proceed along the lines of the successive levels more frequently than do the unsuccessful generalizers. This finding would seem to have

an important bearing upon guidance in learning and reasoning.

The relation of the method of presentation to the order of use of the levels was studied by means of percentages. Table 9 summarizes the data. The greatest percentage difference is

TABLE 9

DISTRIBUTION OF SUBJECTS USING MORE THAN ONE LEVEL IN EACH
METHOD AND PER CENTS USING LEVELS IN ASCENDING ORDER

Method	Number of Subjects Using more than One Level	Number of Subjects Using Levels in Ascending Order	Per Cents of Subjects Using Levels in Ascending Order
Concrete	14	5	36
Pictorial	16	9	56
Verbal	18	11	61

that between the concrete and verbal methods, in favor of the verbal. The significance of this difference was tested with a formula from Garrett.¹⁸ The standard error for the concrete method is .128, and for the verbal method, .115. The formula yields a standard error of the difference of the two means of .172. The "t" is, therefore, 1.48, which, for the fourteen degrees of freedom involved, means that the obtained difference might occur 15 times in 100 by mere chance. Hence, not much confidence can be placed in the superior effectiveness of the verbal method of presentation as an aid to generalizing, in the sense intended in the hypothesis tested.

The effect of mental age upon the order of use of the levels of generalization was studied by means of mean differences between "high" and "low" ability groups, but the procedure yielded a very insignificant "t" (.57).

RELATION BETWEEN PRODUCT AND PROCESS MEASURES

Lastly, a product-moment correlation coefficient was computed between each subject's total problem score for the three series of problems and her one highest level of generalization attained in the three series. This yielded a statistically significant "r" of .73, which, though it denotes a rather high relationship between the two types of measures, still indicates a considerable amount of divergence in the abilities tapped by these two types of measures.

¹⁸ Garrett, op. cit., p. 228.

SUMMARY AND CONCLUSIONS

The primary purpose of this investigation was to study the ways in which tenth-grade girls attempt to educe a general rule for the solution of problems involving a principle of physics when these are presented by each of three methods: (1) concrete demonstration, (2) explanation of flat picture, and (3) verbal description.

A special point was made of using meaningful problems of a type found in school subject-matter, of using school children as subjects, and of conducting the experiment in a school atmosphere as natural as the exigencies of the individual learningtesting situation would permit.

In this study a distinction was made between the "product" of thought and the "process" itself, and a suggestion was made regarding the possibility of part-scoring steps in the latter. Tests were made of hypotheses set up in three related general areas of the problem: (1) the area of end-products (problem scores), (2) the area of "process" (levels of generalization), (3) the area of comparison of the above two areas.

End-products.—The data reveal a tendency for the verbal method of presentation of learning materials to be more effective for the attainment of high problems-scores on series of "generalizing" problems, than either the pictorial or the concrete method. The difference between mean problem scores on the verbal and pictorial methods is negligible. The critical ratios between the verbal and concrete, indicate that the difference in favor of the first mentioned of each pair is quite probably a real one.

A negligible coefficient of correlation (.11) was obtained between mental age scores and the problem-score measures of generalizing ability; however, when the mean scores of extreme groups were compared, the data yielded a "t" very close to the .01 level of confidence, the difference favoring the higher mental age group. These results seem to indicate that the average group is as apt to make high as to make low scores, but that the high M.A. group will tend to make high scores and the low M.A. group will tend to make low scores. The inconsistency of the average group undoubtedly obscures the close relationship between these two traits in the high group and in the low group,

when this relationship is measured by the correlation coefficient for the entire group.

Process.—Out of the "think aloud" protocols secured in a pilot study with fifth-grade girls and in the experiment proper with the tenth-grade subjects, there evolved a scale of "levels of generalization." The scale was modified slightly and approved by Dr. Lenzen of the University of California Department of Physics. The various levels, numbered 1 (lowest) to 5, were then treated as part-scores in the process of inducing a general rule. When the means of the highest level reached by each subject by the three methods of presentation were compared, the differences were found to be insignificant.

In verbalizing solutions to rule-induction problems of the sort used in this study, the more mentally mature use more levels of generalization than do the less mentally mature. The difference is statistically significant.

Successful generalizers, that is, those who attained the highest level of generalization were found not only in the highest M.A. group but also in the "average" and "low" groups.

Comparing the successful with unsuccessful generalizers for the number of subjects in each group who used two or more of the levels, the experimenter found that the difference was in favor of the successful group and was statistically significant. When the comparison was made on the basis of three levels used, the difference was in the same direction and was even more significant. This finding would seem to point to at least two conclusions in regard to teaching. When the technique of teaching is expository, the teacher might well emphasize facts which are related to but less comprehensive than the one being taught, however "obvious" these might seem to him to be. When the method is that of "self-discovery" for the pupil, the teacher might encourage the pupils to discover and use as many related "facts" as possible, even though they do not seem to be the ultimate solution needed.

The data of this study do not reveal any differences among the three methods of presentation for inducing the subjects to use numerous levels of generalization.

Successful generalizers tend to use levels of generalization in ascending order more frequently than do unsuccessful general-

izers. The difference between the two groups is statistically significant.

The data reveal a tendency, not statistically significant, for the verbal method of presentation to aid pupils to the use of levels of generalization in ascending order more effectively than the other two methods. Mental age seems to have only slight, if any, effect upon the order of use of the levels of generalization.

Process and product measures.—The product-moment correlation coefficient of .73 denotes a rather high relationship between the problem score and the level-of-generalization score measures, but also seems to indicate a considerable amount of divergence in the abilities tapped by them.

Rev. Dr. John Tracy Ellis, professor of Church History at The Catholic University of America, has been invited by the Walgreen Foundation at the University of Chicago to deliver a series of four lectures in January 1955 on historical aspects of American Catholicism.

A student in the Department of Greek and Latin at The Catholic University of America, Miss Ursula Heibges, has been awarded the Woodrow Wilson scholarship.

The Benedictine Archabbey of St.. Meinard celebrated its centennial privately on March 21. The public celebration of the centennial will be held next autumn. Since its founding in 1854, St. Meinrad's has educated 1,773 priests.

First president of the new San Diego College for Men is Rev. John L. Storm, a graduate of St. Francis College, Loretto, Pennsylvania, and Niagara University, who formerly served on the faculties of Niagara University, and Gannon and Seton Hill Colleges.

School building experts consider 27 per cent of the nation's elementary and secondary public schools satisfactory, 40 per cent fair, and 33 per cent unsatisfactory.

In 1952, some 700,000 public school pupils attended classes in rented quarters or in structures not suited for school use.

HINDSIGHT, INSIGHT, AND FORESIGHT IN COLLEGE STUDENT PERSONNEL WORK

JAMES J. CRIBBIN'

Respice, Adspice et Prospice has always been an excellent motto for the simple reason that it is from the lessons of the past that we derive such insight into the present as will enable us to cope effectively with the problems which will confront us in the future. There is considerable evidence, moreover, that the problems which will face the American Catholic college in the next fifteen or twenty years will challenge all the ingenuity and resourcefulness of our leaders if adequate solutions are to be evolved. For instance, the excellent publication, College-Age Population Trends, 1940-70, indicates that in nine states and the District of Columbia the college-age population by 1970 will have increased over 100 per cent above the corresponding figure for 1953; the range extending from 101 per cent for Maryland to 230 per cent for California. In thirteen states the increase will be from 76 per cent for Illinois to 98 per cent for Delaware, while for eleven states comparative statistics foreshadow an increase of from 71 to 75 per cent, and for thirteen states an increment of from 26 to 50 per cent. In fact only two states. North Dakota and Oklahoma, will show gain of less than 25 per cent in the college-age population. It has been estimated that the 8,584,336 college-age group of 1949 will by 1970 have grown to some 13,609,831, an over-all increase of approximately 59 per cent.

These data demand the most careful study of all Catholic educators at the college level, for they constitute the roots from which some of our most perplexing problems in education will grow in the next decade or two. They are particularly significant, however, for the student personnel worker, since, as the guidance point of view becomes more and more influential in education and the number of students increases, it is almost in-

¹ Cited in "Keeping Abreast in Education," *Phi Delta Kappan*, XXXV (January, 1954), 191.

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evitable that guidance programs will be expected to play an increasingly important part in the solutions of these problems. However, if student personnel programs are to avoid past errors they must learn from the past, which can instruct in three ways. It can indicate the reasons why present systems are somewhat less than perfect by revealing just how many of these programs have come about; it can tell us much of the difficulties of the personnel worker; it can provide reliable evidence of the genuine advances which have thus far been achieved.

GUIDANCE IN THE PAST

Guidance programs of the past, as often as not, have "growed like Topsy." Too often they have been established by administrative fiat in terms of ukases, directives, appointments, and blueprints: and far too frequently the two groups most influenced by such programs, the faculty and students, have been the least represented in the formulation of policy and practice. The truth to tell is that although many colleges. Catholic and secular alike, would almost rather be stigmatized by the accusation of communism than admit that they lack a "guidance program," the reason for providing such services has not always been an undiluted concern for the optimum development of the individual student. In certain instances at least, fear lest an accrediting agency frown upon an institution so old-fashioned as to believe that a highly organized program was unnecessary and a collegiate variation of the simian process of "keeping up with the Joneses" have been contributing factors.

As a result, it is not surprising to find that the attitudes towards guidance at present are basically four in number. First, it is misunderstood and held suspect by a faculty frightened by the unfamiliar or else it is considered an additional drudgery over and above the instructional duties for which they have been hired and for which they are paid. When this occurs, it is generally the fault of the administration, which has been so psychologically naive as to expect teachers to carry out policies in the evolvement of which they have had no representation and no say. At times, too, this unhappy situation has been brought about by the so-called "guidance worker," who, enamored of his specialty, has failed to capitalize upon the tremendous guidance resources available in an interested faculty. The sec-

the college.

ond attitude toward guidance is one which tolerates the program as a delightful peripheral appendage in the person of the "guidance officer," who, if he is not wary, may well find his work largely clerical or at least restricted to a specialized area far apart from the main currents of faculty and student life. A third attitude towards this movement is one which welcomes it for the services it can render but only under one absolute condition, that it not interfere with the status quo of more important matters. Finally, and this is the ideal state, the student personnel program is given a definite role to play as an integral part of the total educational program.

As a result of the origins of and attitudes towards guidance, many programs have adopted a buckshot approach to the problems involved, emphasizing certain phases to the neglect of other equally significant aspects of the process. Absence of a considered frame of reference, moreover, has often resulted in a failure to determine the specific objectives of guidance within a given institution—a condition which has resulted in a lack of co-ordination of effort, a concentration on the talents of the few, the ignoring of other powerful influences in the lives of students, a stress on minimal essentials and imitation rather than on optimum service and reliance upon the creative forces within

Hindsight likewise tells us much of the origins and difficulties of the guidance worker. Gravitating towards the field because of a realization of its potentialities for good, he has often found himself in a new and unstructured situation for which he has had neither training nor experience. Thus, as Shakespeare would have it, in his time he has played many parts: (1) "Salesman," with a compulsive itch to prove the worth of his speciality and thus win a sure place in the institutional sun; (2) "Social Struggler," in a continuous effort to gain acceptance and status in the collegiate community; (3) "Remediator," catering to the educationally lame; (4) "Diagnostician," serving the emotionally halt; (4) "Counselor," giving the gift of sight to the vocationally blind; (5) "Rehabilitator," seeking to alleviate the thwarting influences of a student's entire developmental history.

Because of his self-sacrifice, the guidance worker has accomplished much. But because of his evangelistic fervor, he has at

times run the risk of forgetting four realities: (1) that he is not the only one in the institution who has the welfare of each individual sincerely at heart; (2) that no one, not even the counselor, sees the student as a whole; for so to see him requires at least the co-operative effort of the whole school; (3) that his task is not to "enlighten the unenlightened faculty" but to work with all who are in a position to help the student make the most of the one life God gives him; and (4) that his best path to successful work with students is to multiply himself through the faculty rather than to go it alone, realizing that in seeking to extend himself and be all things to all men he may very well end by becoming almost nobody to everybody in the college.

Finally, hindsight reveals the genuine advances which have been made in the relatively short life of the student personnel movement. Guidance is accepted, of this there can be no doubt even though one may suspect that it has at times been accepted before it has been clearly understood. In addition, great progress has been made in the development of personnel techniques, while an ever-increasing realization of the need for professional preparation has been generated. Moreover, there is a deeper appreciation of the need for both extensive and intensive elements in guidance and a keener awareness of the roles which a competent personnel worker should play in the total educational program.

ANALYSIS OF PRESENT PROBLEMS

If much can be learned from a scrutiny of past experience, a careful analysis of the present yields many insights among which the following are surely important:

The end of student personnel work is simply to work until all that is divine in the student be formed, while laboring with equal zeal until all that is human be developed in him. Its aim, therefore, is no such amoeba-like concept as "adjustment," perhaps the most unchristian and colorless concept in the entire psychological dictionary, nor polysyllabic vapidity as a "personal and satisfying philosophy." Our objective is the perfection of our students, a perfection based on moral convictions, a healthy humility, a sane independence, and a scientific regard for truth

and facts. But we seek more than a self-centered perfectibility in which the student so concentrates on avoiding the noxious influences of naturalism that he is not only not of the world but not even in the world. We seek to produce Christophers, who are at peace with God, with themselves and with their fellowmen, and who, therefore, are equipped to present Christ to the world, equal to the bruises involved in the process, without inferiority complex or callow pugnaciousness. In short, we seek holy, refined, articulate and thick-skinned alteri Christi.

Guidance is fundamentally a problem of human relations and not one of techniques. Therefore, the mechanics of the processes must never be permitted to interfere with the independence of action or the courage to experiment on the part of the individual college. Nor should a dangling-puppet type of organization or a rigid procedural pattern be allowed to stifle the warm human relationships among administrators, faculty, and students, which

are the heart of guidance.

Since student personnel work requires the co-ordinated effort of all, it simply cannot succeed if the attitude of the administration towards the faculty is one of domination; of the faculty towards the students one of paternalism; of the religious towards the lay faculty one of mere toleration or condescension. One may or may not agree with Cunningham that American Catholic college administration has been European not American, monastic not scholastic, autocratic not democratic; but, regardless of one's position in this matter, the fact remains that Catholic education will perforce depend to a greater and greater extent on the devotion of the dedicated lay faculty member. And it is equally evident that if our students are to be conscious forces for good, they must learn to work with others from educators who are democratic and humane in dealing with all.

The student personnel worker plays a multiple role on the campus. He is a generalist rather than a technician, a coordinator rather than a one-man show. But above all, he is an educator, and as such his efforts should be geared to the academic program, ever seeking to facilitate this program and to supply such services as are not already provided by it for the

² William F. Cunningham, General Education and the Liberal College (St. Louis: B. Herder Book Co., 1953), chap. ii, passim.

students' benefit. He therefore must have intimate contact with all students and faculty, for his principal role is not that of an artisan but that of an educational statesman who, taking the long view, can understand another's frame of reference, can respect another's competence, and can think in terms of the good of all. Except for a few highly specialized persons, it might be well for every "guidance worker" to teach at least one undergraduate course and sponsor one of the extracurricular activities, if he wishes to keep in close contact with student and faculty thinking and attitudes.

It is all very well to declaim that the Catholic college should be guidance-conscious, guidance-organized and guidance-active. However, until adequate provisions are made in terms of personnel, physical resources, financial support and academic recognition, all this remains idle oratory. And to think that competent guidance work can be done without this support is to include in a relatively harmless but nonetheless real form of delusional behavior. In this regard two truths are evident: that one finds time to do whatever he really thinks is important and that where there is a question of necessity money is of minor significance.

There is need for balance and totality in student personnel work if the tail which is vocational guidance, or placement, or academic advisement, or psychological counseling is not to wag the whole dog which is guidance.

Abandoning the idea that guidance is merely a matter of diagnostic devices and individual counseling, it behooves every institution to seek out practical means whereby it may actualize the tremendous potentialities for good to be found in those group activities in the college which have been so misnamed as to be termed "extracurricular," and so misunderstood as to be considered of less importance than testing and individual counseling.

Even slight reflection on what has been said indicates that much remains to be done if the principle inherent in the student-personnel point of view is to become a reality on the Catholic college campus. By way of preface, however, let it be said that the problems involved will not be solved by the platitudes of John Dewey. On the other hand, and this is equally important,

they will not be solved by mellifluous quotations from St. Thomas and the popes. They will be answered, at least in part, when each institution by means of some fundamental research determines the specific needs of its own campus, creates a democratic atmosphere which permits guidance to function, and evolves in a co-operative fashion practical measures for meeting its own needs,

SUGGESTIONS FOR THE FUTURE

Having stated this absolute *sine qua non*, it is now possible to spell out some of the major problems facing college personnel work in the next decade or two.

There is need for basic, evaluative research to determine the value of what is being done and what ought to be done if the student is to receive a fair return on his invested tuition. If only we had as much painstaking research in Catholic education as we have oratory, our position would be much more secure.

A determined effort must be made to decide just what type of education is best calculated to provide the trained college personnel worker. The situation at present is one in which clinically oriented, vocationally oriented, educationally oriented, experimentally oriented, counseling oriented, administratively oriented and faculty oriented personnel—all seemingly have an equal right and competence to perform personnel functions on the campus. What is needed is some basic agreement as to the specific understandings, skills and experience required for effective work in the college setting. And what is even more urgently needed is some plan whereby the resources of these trained specialists may be co-ordinated for the good of the institution and the student.

More efficient measures must be discovered for increasing faculty participation in the student personnel program, together with practical procedures for the in-service training of interested teachers. This is true not only because of the limited financial resources of the average Catholic college, but also because—and this is far more important—any personnel program which loses close contact with the faculty is doomed before it starts.

The status and role of the guidance worker in college must be clarified. At present he often exists in a quasi twilight area between administration and instruction, an area which may be designated by any of hundreds of official titles. There is ample but by no means completely convincing evidence that the personnel worker should be given an academic status equivalent to other academic ranks in the institution. For instance, if given some such title as associate professor, the worker stands a much better chance of being accepted by the faculty, or at least by that portion of it which is composed of instructors and assistant professors.

Now that the provision of remedial services for at least some students is an accepted policy in most colleges, there is a need to decide how many and what kinds of services are to be considered the responsibility of the institution. Are these services to be multiplied to meet every conceivable need, or is the college to draw a line beyond which it is unwilling to go? Surely an intelligent admissions policy can ensure that the accepted students have the necessary background, and certainly it seems reasonable that each college should provide such help as will enable the individual to fill in specific hiatuses in his educational background, such as in the areas of speech disabilities and reading defects. Yet the problem still remains with respect to the extent to which a relatively small college can extend itself in this matter of remedial services for the few without prejudice to the equal rights of other better prepared students to the best the college has to offer. One aspect of this problem connotes the usual question of whether this is the best college for this student and whether this student is the best type for this college. The other aspect of this question involves the most efficient utilization of the admittedly limited resources of the typical Catholic college.

More efficient methods must be devised for the more fruitful use of the guidance resources of the community. The individual college is foolish to the point of abnormality to attempt to solve all the problems of its students if there exist in the community certain agencies whose sole purpose for being is to alleviate this or that type of human difficulty.

Within the guidance program itself we must determine the

relative importance of and the relationships existing among individual counseling, group development, and academic advise-

ment as parts of the total personnel program.

We must learn how better to provide for the interchange of ideas and experience among sister institutions not only by means of general conferences but by the formation of workshops which systematically attack common problems. To the same end, there is need for the organization of local groups of counselors and personnel workers and some means for disseminating to all Catholic colleges the results of research studies carried on in individual institutions.

We must avoid an atomistic approach to the evaluation of what we do, beguiling ourselves by amassing statistics to the neglect of examining our consciences with respect to the quality

of service we offer our students and their parents.

Since there is no reliable evidence that religious vocations will increase in proportion to the anticipated growth of the college-age group referred to in the first part of the paper, there is need for granting to the lay faculty member the status of copartner in Catholic collegiate education. In many institutions it is clear that the principle of permanence is not the religious, who may be transferred every five or seven years, but the lay faculty member who frequently remains until he receives his twenty-year *Bene Merenti* medal. To treat such a one as though he were merely a "hired hand" or to deny him a definite role in the formulation of school policies, strictly defined, seems exceedingly unwise and unjust.

This above all, each college must decide to what extent it trusts its students by determining to what extent and in what manner they may prudently be entrusted with the right of self-determination in their own affairs. It is a truism that we learn what we live. In the light of this, it is fantastically unrealistic to hope to produce apostles who will hazard the ways of Christ in an unbelieving world if we ever cling to the "safe" way of sheer catechetical indoctrination, to hope to produce leaders of initiative if we concentrate for sixteen years on the production of "mice-like" followers, to hope that the students will learn to use their God-given freedom responsibly if we but impose our own discipline upon them without regard for their feelings

or co-operation. If the Catholic college is to prepare its student for life in a Christian democracy, then on the campus there must be a blend of Christianity and democracy. On the practical level this implies the transfer to the students—to the degree that their intelligence, maturity and experience permit—the right to self-government in those matters where such transfer is morally right, socially desirable, and educationally prudent. One simply does not graduate articulate, resourceful alumni by training them according to a mechanical stereotype as though they were robots. Of all people on the campus surely the guidance worker should be convinced of this.

Before the personnel worker becomes overeloquent concerning the need for developing initiative in the student, however, he might well begin by developing this quality in himself on the premise that nemo dat quod non habet. To state that Catholic psychologists and personnel workers have not been entirely successful, at least until quite recently, in making their influence felt in national and local professional organizations is truly to bark one's shins against the obvious. In the next ten or twenty years one of the greatest responsibilities of these Catholic educators will be to strive in season and out of season to see to it that the Catholic point of view is represented in the development of principles and policies within these organizations, not merely because these views happen to be Catholic but because they are valid and true.

THINGS TO PRAY FOR

Regardless of the physical limitations under which personnel workers will be forced to labor during the next decade or two, the fact remains that prayer, the greatest resource available to the guidance worker, is abundantly present to all. While one hesitates to tell others the things for which they should pray, it might be humbly suggested that they pray for two things particularly. The first is that their external ministrations may not interfere with the attempts of the Holy Spirit to guide the student by His internal promptings but rather render the student more responsive to these inspirations. And, secondly, it might be well to pray that our work may be productive enough to merit the approval of key administrative officials. For without this

support we are but another vested interest hawking our wares along the educational turnpike.

Trinity College, Burlington, Vermont, is the ninety-fourth college in the nation to affiliate with Kappa Gamma Pi, national scholastic honor society of Catholic women's colleges.

The new forty-eight page 1954 Catholic Film Directory was released last month by the Catholic Film Center, 29 Salem Way, Yonkers 3, New York. Copies may be obtained by sending 10 cents to cover mailing charges.

Arithmetic is being made much more interesting in some of Milwaukee's Catholic elementary schools. Pupils in grades four to eight check calculations on modern adding machines. A new abacus, of about textbook size, is used by pupils in the first three grades. There, no one hates to do arithmetic any more!

The sixteenth annual National Convention of the Catholic Students' Mission Crusade will be held at the University of Notre Dame, August 26-29.

The American Association of Junior Colleges has just published *Books for Junior Colleges*, a basic list of some four thousand titles. Priced at \$7.50, the volume is edited by Frank J. Bertalan, of the Library of Congress and the Department of Education of The Catholic University of America.

One of the very few Catholic clergymen on state boards of education is Msgr. Emmet J. Riley, former president of Carroll College, Helena, Montana. Last month, Msgr. Riley was reappointed to the Montana state board for an eight-year term. He has been a member of the board since 1934.

Sister Mary Irene, chairman of the French Department of Mundelein College, was recently named an Officier D'Academie by the French Minister of Education for outstanding service to the cause of French culture.

The Catholic University of Louvain in Belgium recently opened a center for Congolese students, both Negro and white.

FACTORS IN THE TEACHING-LEARNING SITUATION AND THEIR EFFECT ON FIRST-GRADE READING

SISTER M. DE LELLIS BRUCKER, S.S.N.D.*

The vast majority of present-day educators are agreed that reading is not only the most important but also the most troublesome subject in the curriculum of the primary grades. Durrell asserts that practically all problems in reading can be traced "to a poor beginning with difficulties increasing as the child progresses through the grades."1 Since it is obvious that in reading as well as in other types of learning the beginning is of great importance, students of the problem are not surprised to find authors making the statement that later reading deficiencies can be prevented by proper teaching in the primary grades.2

In the many experiments which have been conducted in the past decade on the reading problem, the investigators have been interested in such pupil traits as chronological age, mental age, intelligence quotient, predicted reading grade, and the like: very little, if any, attention has been given to an analysis of the factors in the teaching-learning situation which might be related to success in first-grade reading. Here it is intended to set forth the outline and the results of an experiment which was conducted to analyze three phases of the teaching-learning situation in order to determine their effects on the level of reading achievemnt in the first grade.

RELATED LITERATURE

Although a review of literature in the field of reading shows that no investigation has been made on the problem as just

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¹ Donald D. Durrell, Improvement of Basic Abilities (Yonkers, N.Y.:

World Book Co., 1940), p. 279.

² William S. Gray and others, "Reading," Review of Educational Research, X (April, 1940), 79-106.

stated, several studies showing some relevancy to it have been reported. Steinbach made an experimental investigation of the relationship existing between reading achievement of first-grade pupils and chronological age, mental age, intelligence quotient, socio-economic conditions, bilingualism, kindergarten training, speech defects, attendance, and the results of the Metropolitan Reading Readiness Test.⁸ The findings in this study showed that no single factor was the unique cause of failure or success in reading. Furthermore, when groups of pupils were equated for a combination of certain factors, their average reading achievement was likewise equal.

Ring compared the progress of two groups of pupils who were given a reading-readiness program with that of pupils who did not receive such help.4 It was found that the reading-readiness group progressed faster after the reading was begun than did the other groups of comparable size, chronological age, and

mental age.

In a series of related studies by Rostker, Rolfe, and LaDuke. it was reported that correlations between pupil gains and different measurements of teachers were generally low, but by combining the scores for batteries of tests, varying from four to fourteen in number, multiple correlations between teacher characteristics and pupil gains could be obtained that ranged from .65 to .845.

While experimental studies of the relations between the teaching-learning situation and achievement in reading are lacking, many writers in the field of educational theory have discussed the role of the teacher in the classroom and, like Maritain, have pointed out that the dynamic factors or agents at work in education are "the inner vitality of the student's mind and the activity of the teacher."6 While calling attention to the fact that

Sister Mary Nila Steinbach, An Experimental Study of Progress in First-Grade Reading ("The Catholic University of America Educational Research Monographs," XII, No. 2 [Washington, D.C., 1940]).
 Ona E. Ring, "Effectiveness of a Reading Readiness Program as Shown by Results of Standardized Tests," California Journal of Elementary

Education, IX (November, 1940), 91-96.

⁵ L. E. Rostker, "The Measurement of Teaching Ability," Journal of

Experimental Education, XIV (September, 1945), 6-51.

J. F. Rolfe, "The Measurement of Teaching Ability," ibid., 52-74.
C. V. LaDuke, "The Measurement of Teaching Ability," ibid., 75-100.

§ Jacques Maritain, Education at the Crossroads (New Haven: Yale University Press, 1943), p. 29.

the teacher is a genuinely effective dynamic factor and ministerial agent, Maritain adds that this fact has many far-reaching implications in education. The present experiment was designed to discover and to measure, if possible, the relationship between the dynamic factors in the case of first-grade reading. Perhaps, as a by-product of the investigation, some light may be thrown on the far-reaching implications of this relationship.

EQUATING GROUPS

At the beginning of the 1949-50 school year, a testing program was set up for all the children in the 234 first-grade classes of the Archdiocese of St. Louis for the purpose of selecting the subjects for this study. The Kuhlmann-Anderson Intelligence Test was administered in September in order to obtain mental ages and intelligence quotients. In the beginning of October, Sister Nila Steinbach's Reading-Readiness Test was given in order to obtain the data necessary for the classification of pupils into reading groups. The medians for every class on both tests were obtained.

After the administration of these tests was completed, a reading program was outlined. The Faith and Freedom Readers were used as basic texts, with their accompanying workbooks; the Cathedral Basic Readers were used as supplementary texts. A reading workshop was provided for all teachers involved, and definite instructions were given to them regarding the use of the teacher's manual of the Faith and Freedom series. The teachers were advised to group their pupils according to ability and readiness for pre-reading activities or for the beginning reading instruction, using as bases for classification the results of the Kuhlmann-Anderson test and of the Steinbach test. They were encouraged to keep their reading groups flexible so that pupils could be shifted from one group to another as their progress warranted.

At the close of the first semester, the Archdiocesan reading examination was administered to all the first-grade pupils by their respective teachers. Teachers scored the papers of their own pupils and found their own class medians. For all classes involved, the median was 21.2; the first quartile, 18.7, and the third quartile, 23.5.

Two groups of twenty-five classes each were selected from the original 234 classes. Group A included the better reading classes and was selected from the fifty-eight classes in the upper quarter of the distribution, while Group B was made up of the poorer reading classes from the lowest fifty-eight classes. These two groups were equated on such variables as chronological age, mental age, intelligence quotient, and reading readiness. Furthermore, these selected classes were classified as to location: in the northern, eastern, southern and western sections of the City of St. Louis, in the immediate county area, and in the rural area of the Archdiocese. An inspection of these classifications showed that the classes selected and equated were a good cross section of their respective geographic areas and could be considered as forming a reliable, representative sample for the experiment. This procedure of selection helped also to control the socio-economic status of the classes involved.

The teachers of each of the fifty classes selected were asked to fill out a card for each pupil, giving such data as chronological age, mental age, intelligence quotient, reading-readiness score, and the pupil's score on the first semester Archdiocesan reading examination. When the classes were selected, there were over two thousand pupils in them, but, because of the incompleteness of some pupil cards, the actual number of pupils studied was cut to 1,596. Of this number, 828 pupils were in Group A and 768 in Group B.

In Tables 1 and 2 are presented data showing how the two

TABLE 1

EQUALITY OF THE TWO GROUPS AS SHOWN BY STATISTICS
DERIVED FROM CLASS DATA

Variable	Group	Number of Classes	Mean	S.D.	S.E.M	Diff. MA_MB	S.E. Diff.	C.R.
C.A.	A	25	6.3	1.3	.3	0	.5	.0
	В	25	6.3	1.8	.4	.0		.0
M.A.	A	25	6.9	2.6	.5	.0	.6	.0
	В	25	6.9	2.2	.4			
I.Q.	A	25	108.8	3.3	.7	.7	.9	.8
	В	25	108.1	3.0	.6			
P.R.G.	A	25	2.6	.1	.02		00	
	В	25	2.6	.1	.02	.0	.03	.0

groups were equated on four variables, namely: chronological age, mental age, intelligence quotient, and predicted reading grade. The predicted reading grade was obtained by means of the Steinbach test. The similarity of the two groups is quite evident. The statistics of Table 1 are derived from class data, there being twenty-five classes in each group.

Individual pupils in the fifty classes were also studied and compared according to the four equating variables. Table 2 presents data showing the extent to which pupils in the two groups were equated.

TABLE 2

EQUALITY OF THE TWO GROUPS AS SHOWN BY STATISTICS
DERIVED FROM INDIVIDUAL PUPIL DATA

	Number							
Variable	Group	of Pupils	Mean	S.D.	S.E.M	Diff. MA_MB	S.E. Diff.	C.R.
C.A.	Α	828	6.3	4.4	.2		_	
	В	768	6.3	4.8	.2	.0	.3	.0
M.A.	A	828	6.8	5.3	.2	.1	.3	
	В	768	6.7	4.8	.2			.3
I.Q.	Α	828	108.7	8.6	.3			0.0
	В	768	108.6	8.5	.3	1.1	.4	2.8
P.R.G.	A	828	2.5	2.1	.1			
	В	768	2.5	2.1	.1	.0	.1	.0

Since there was no difference between the means of the pupils in Group A and those in Group B in chronological age and only a difference of .1 in mental age, it would seem that the difference in the intelligence quotients should also have been very small. However, due to the fact that larger numerical values are involved in the intelligence quotient, it is readily understandable that the difference in means will be numerically greater. Once allowance is made for this fact, Tables 1 and 2 indicate that the groups are sufficiently equated.

FINDING DIFFERENCES

The mean achievement scores on the Archdiocesan examination at the end of the first semester were found in order to study the differences in reading progress between the groups of classes and between the groups of pupils. Table 3 gives the data showing this difference between the groups of classes; the data for this difference between the groups of pupils are given in Table 4.

TABLE 3

DIFFERENCE IN READING PROGRESS BETWEEN THE TWO GROUPS
AT END OF FIRST SEMESTER AS SHOWN BY STATISTICS
DERIVED FROM CLASS DATA

Group	Number of Classes	Mean	S.D.	S.E.M	Diff. MA-MB	S.E. Diff.	C.R.
Α	25	24.3	1.2	.2	~ .	.4	17.8
В	25	17.2	2.1	.4	7.1		

TABLE 4 DIFFERENCE IN READING PROGRESS BETWEEN THE TWO GROUPS AT END OF FIRST SEMESTER AS SHOWN BY STATISTICS DERIVED FROM INDIVIDUAL PUPIL DATA

Group	Number of Pupils	Mean	S.D.	S.E.M	Diff. MA_MB	S.E. Diff.	C.R.
Α	828	23.1	3.9	.1		2	31.0
В	768	17.0	5.6	.2	6.2	.2	

The high critical ratio in each of these two tables definitely shows that both the classes and the pupils in Group A were superior to the classes and the pupils in Group B in reading. This superiority lead to the second part of the investigation, which was concerned with finding some explanation of why Group B did not achieve equally as high as did Group A when they were so closely equated on chronological age, mental age, intelligence quotient, and reading readiness.

STUDYING THE TEACHING-LEARNING SITUATION

A visitation was made to every class in each group during the second semester of the school year. The purpose of this visit was to study the teaching-learning situation with special emphasis on three factors which had been selected for study. These factors were: (1) materials of instruction, (2) administration of instruction, and (3) professional efficiency of the teacher. The evaluative criteria used to judge the teaching-learning situation relevant to these three factors were based on the

Criteria for the Evaluation of Catholic Elementary Schools.7

Following observation and evaluation of teaching techniques in the class situation, materials of instruction were examined, and each teacher was interviewed. At the end of the second semester, another reading examination was administred. Data showing the difference between Group A and Group B, according to class data, on this second examination are given in Table 5.

TABLE 5

DIFFERENCE IN READING PROGRESS BETWEEN THE TWO GROUPS
AT END OF SECOND SEMESTER AS SHOWN BY STATISTICS
DERIVED FROM CLASS DATA

Group	Number of Classes	Mean	S.D.	S.E.M	Diff. MA-MB	S.E. Diff.	C.R.
A	25	18.7	2.8	.6	4.3	.7	5.9
В	25	14.6	2.1	.4	4.1		

It will be noted that the critical ratio in Table 5 shows that Group A remained superior to Group B in reading achievement.

A mean rating was then obtained for the twenty-five classes in each group for each of the three variables in the teaching-learning situation which were rated by the investigator during classroom visits. Data on this phase of the study are presented in Table 6.

TABLE 6

DIFFERENCES BETWEEN THE TWO GROUPS AS SHOWN BY STATISTICS
DERIVED FROM RATINGS OF CLASSES ON THREE
TEACHING-LEARNING SITUATION FACTORS

Variable	Group	of Classes	Mean*	S.D.	S.E.M	Diff. MA_MB	S.E. Diff.	C.R.
Materials of Instruction	A B	25 25	3.6 3.2	.5 .5	.1	.4	.1	4.0
Administration of Instruction	AB	25 25	3.4 3.0	.3	.1	.4	.1	4.0
Professional Efficiency	AB	25 25	3.6 2.8	.8	.2	.8	.2	4.0

*Variables were rated on a five-point scale.

⁷ Sister M. Vernice, S.N.D., and others (eds.), Criteria for the Evaluation of Catholic Elementary Schools (Washington, D.C.: Catholic University of America Press, 1949).

Data gathered from teachers in interviews on the size of her class, the number of grades in her classroom, her experience in the first-grade, her experience in the present school, her total number of years of teaching experience, and the highest level of her training were analyzed and studied. No statistically significant differences were found between the teachers in Group A and the teachers in Group B on any of these factors.

A closer study of the items evaluated under "Materials of Instruction," however, revealed that 52 per cent of the classes in Group A were rated above average in textbooks and their use; only 24 per cent of the Group B classes were given this rating. Moreover, with regard to available audio-visual aids, 80 per cent of Group A classes as against 52 per cent of Group B classes were rated above average. Even greater superority of Group A over Group B was noted in the availability of materials for providing group experiences; 48 per cent of Group A classes were rated above average while only 8 per cent of Group B classes were so rated. On other criteria, such as collateral materials, play equipment, and instructional supplies, the groups differed very little.

On the criteria regarding "Administration of Instruction," a very definite superiority was noted for Group A. Sixty-eight per cent of the class situations in this group were rated above average in providing for individual differences, while only 28 per cent of Group B classes rated this high. Group A also excelled in class mood, with 76 per cent of its classes being rated above average; on this point, 40 per cent of Group B classes were above average. With regard to other items in this section of the criteria, such as adequacy of time allotments and classroom discipline, little difference between the groups was noted, both being rated rather uniformly above average.

Percentagewise, more than twice as many teachers in Group A as in Group B were rated above average in the "Professional Efficiency of Teacher" section of the criteria. The percentage of Group A teachers rated above average on items, such as, planning, knowledge of subject matter, motivation, use of instructional materials, manner of questioning, and methods of appraisal, ranged from 64 to 72. On these same items, the

range of per cents of Group B teachers rated above average was from 20 to 32.

One particular finding which has a direct bearing on the solution to the problem posed in this study is that while the classes of both groups were equally well supplied with collateral materials, instructional supplies, and general school equipment, nevertheless, 64 per cent of Group A teachers as against only 32 per cent of Group B teachers were rated above average in the use of these materials.

CONCLUSION

Within the scope of its investigation, this study's findings indicate that progress of first-grade pupils in reading depends a great deal on the factors involved in the teaching-learning situation. An important factor, without any doubt, is the teacher. If first-grade reading progress is to be improved in class situations where pupils are doing less than might be expected of them, in view of their intellectual ability and their readiness for reading, consideration must be given to improving the teacher—her ability to plan and organize learning, her general knowledge of things to be taught, her techniques in providing for individual differences, her devices for motivating the pupils, and similar essentials of good teaching. Important, too, in improving first-grade reading, is the consideration which must be given to supplying teachers and pupils with adequate instructional materials—textbooks, audio-visual aids, and the like.

If the solution to the problem required lengthening the period of reading readiness, it would indeed be a difficult one to apply, especially with the present shortage of teachers and of classroom space. But the solution indicated in this study is not an extremely difficult one. The teaching factor can be strengthened, either by improving the first-grade teachers themselves or by making adjustments to get the better teachers of reading who are available into this all-important grade. It need hardly to be said that the instructional-materials factor can be improved—and without great financial distress to any school. It seems a crime the way pupils in some schools are slighted in the matter of books. Games can be won in tattered uniforms, but reading can not be learned well from torn books.

THE TRAINING OF CHARACTER

REV. EDWARD F. GARESCHE, S.J.*

There are two ways of training children to be disciplined, observant and obedient. These two methods may seem for a while to have pretty much the same results in character training, but there is a world of difference in their ultimate consequences. One is only a temporary training, which weakens and falls apart under the stress of adult experience. The other is really a training for life, and it enables the one who has been so fortunate to be thus prepared for adult experiences to withstand temptation, to act on principle, to be true to faith and honor—in other words, to be a good Christian and a good citizen, no matter what happens in the way of trials and temptations. These two methods may be familiarly entitled "Training from the Outside" and "Training from the Inside." A description of what is meant by each will show how great a difference there is between them.

TRAINING FROM THE OUTSIDE

By training children from the outside are meant all those exterior compulsions, nudges, threats, punishments, and incitements which get the child to do the will of the elder, to conform to the elder's will, to act as expected, to be decorous, docile, observant and obedient, not from any interior conviction or profound belief, but just because it is easier to conform than not to conform.

This method is observed in classes where the personality of the teacher is dominant and forceful, where the teacher more or less intimidates the pupils and gives them the idea that they must obey and do what is expected of them, or else be subject to certain penalties. In this way, the individual and the group keep the rules and conform generally to expectations, not from any inward convictions or conscientious principles, but rather because there is someone older than they are ready to make

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them uncomfortable if they do not behave. Hence, the pupils do their tasks, but there is no personal enthusiasm or spontaneous impulse to co-operate and obey.

Perhaps, this is an extreme case. Usually some interior inspiration accompanies every outward performance. But it is typical of training from the outside that the pupil is rather acted upon than acting. His will is moved by domination, by the will of another, rather than through his own conviction. It is easier for him to do "what everyone else does" rather than suffer embarrassment for acting according to principles he sees. If, after they leave school, pupils act for these reasons, they will run with the herd, they will follow the line of least resistance, namely, do "what everyone else does." And because they have not been wound up from the inside, they may abandon the Catholic principles they learned in religion class, become very poor citizens and leave their teachers greatly disappointed.

TRAINING FROM THE INSIDE

The other way of training is from within. It consists in explaining the reasons for right actions and in suggesting and implanting motives for doing good which will last for life. It means to awaken and train the conscience, to stir up in the mind a real zeal for truth and in the will a strong thirst for good, a desire to please God and to help one's fellow man, an intention to lead a worth-while existence and to make the most of one's opportunities for the love of God, and of men for the love of God.

Evidently this second way of training is much more difficult and troublesome to follow than the first. It is so much easier, if one is possessed of a forceful and determined character, to lay down the law and impose it on pupils in such a way that they will be afraid to do anything but observe it to the letter. But this does not help them to build up an interior strength against temptation or against their inherent weaknesses of character. It is so much better to implant wholesome motives in the very hearts and minds of the young in order to help them appreciate the values of devotion to duty, observance of good conduct, and regard for the rights of others. Then, pupils will learn to act on principle and carry with them throughout life

a constant guide to goodness.. Out of school, they will have the power, their own power and God's grace, to resist temptation, to refuse to be led astray by anyone, and to stand up for

what they are convinced is right.

As things are now in the world, and have been for many generations and probably will be for many more to come, the life of man is a warfare. He lives successfully here below and gets to Heaven successfully if he resists evil and does what is right. An important element in training the young to live in our world is to help them develop initiative, ambition, courage, temperance, and prudence so that they will have the power to conduct their lives along the paths of virtue. This seems a difficult task for the American school. In the days of Spartan education, when the maxim, "Spare the rod and spoil the child," was literally interpreted-and with a good measure of gustoit was much easier to bring children to manhood with some stability of character. As youngsters they were not just humored along. But how things have changed! The very theories of learning have been revolutionized by soft-headed theorists. It is a wonder, considering how they are humored and catered to, that our young people do not become more self-indulgent and more bent on wrongdoing than they are. It is to the great credit of many of our young boys and girls that, in spite of the unfavorable environment which surrounds them and the spineless education they receive, they do develop into upright characters.

CHARACTER TRAINING IN CATHOLIC SCHOOLS

Catholic schools have yielded less to the influence of modern theories of education than have the non-religious schools. But even in the Catholic schools, there has been some letting down of the bars. There is need in the Catholic schools, too, for more effective training in character—more regard for training from the inside and less insistence on training from the outside. There is need for greater understanding of principles, a stronger sense of duty, and a firmer resistance to the inducements of cheap, debasing amusements.

A particularly noticeable weak spot in the character training offered in Catholic schools, if one is to judge by the products of these schools, is its ineffectiveness in implanting in pupils a desire for eminent service. Outside the orbit of religious careers, few Amercan Catholics rise to eminence in their chosen calling. Catholic educators must do something more than they have been doing to inspire their pupils with an appreciation for leadership and an enthusiasm for using their God-given talents and opportunities in extraordinary ways. This is a difficult task but it is part of the teacher's job.. The good it will bring to the individual, to our country, and to the Church is quite evident. Experience shows that this is something which must be started during schooldays. There are too many adult Catholics in America with eminent qualities of leadership, but whose abilities became known too late in life. A leader is one who has enough courage and enough confidence in himself to forge ahead on his own. It has often been said that children in Catholic schools become selfish from the very unselfishness of their teachers. So much is done for them and so little is required of them by way of service, that they get to look upon themselves only as persons to be served. They take for granted the unselfish devotion of their religious teachers and get lost in a civilization where the individual is so dependent upon self-effort and concern for recognition by others.

The Sisters of Notre Dame of Cleveland have recently opened a school for Indian children in Jamalpur, India. The sisters have worked in the Diocese of Patna, India, for four years.

From July, 1951, to December, 1953, the U.S. Housing and Home Finance Agency made 101 loans totaling \$91,513,000 to American colleges and universities, providing facilities for 22,251 men students, 5,358 women students, 302 student families, and 291 faculty members.

Sessions of the summer School of Catholic Action will be held in four cities this year: St. Louis (June 14-19), Worcester (August 9-14), New York (August 23-28), and Chicago (August 30 to September 4). Attendance is expected to be over 145,000.

THE CATHOLIC UNIVERSITY RESEARCH ABSTRACTS*

A CRITICAL ANALYSIS OF THE CONTENTS OF THE FIRST FORTY YEARS OF THE CATHOLIC EDUCATIONAL REVIEW by Reverend John J. Cuddy, M.A.

This study attempts to analyze the trends and interests of feature articles and special sections of *The Review* during the period from 1911 to 1950. The contributions to this periodical during these years dealt primarily with organization of learning, effective methodology, scientific research, and respect for Catholic education by American citizens generally.

The editorial policy reveals that the pages of *The Review* were never used for unsubstantiated claims or fanatical outcries. The infrequency with which really fine research articles have appeared in this journal indicates, at least in some degree, the lethargy among Catholic educators with regard to this type of writing.

3

A SURVEY OF PRACTICES AND OPINIONS RELATIVE TO HOMEWORK IN DIOCESAN ELEMENTARY SCHOOLS by Mother Virginia Mary Schumann, R.S.C.J., M.A.

Homework is given in almost all the Catholic elementary schools that were surveyed. A variety of factors combine as the reasons for giving homework. General time allotments, set up primarily to guide the teacher in the amount of homework to assign, are followed in sixty-two diocesan school systems. Homework includes both study and written work.

Of the newer types of homework assignments, recreational reading and study of a current problem are considered most practical. The project type assignment is approved as a supplementary task for homework by one-half of the educators participating in the survey. The differentiated assignment to meet the needs of individual differences is highly advocated.

^{*}Manuscripts of these Master's dissertations are on deposit at the John K. Mullen Memorial Library, The Catholic University of America, Washington 17, D.C. Under certain conditions these dissertations may be obtained through inter-library loans.

A STUDY OF THE CHRISTIAN SOCIAL CONCEPTS OF CATHOLIC HIGH SCHOOL STUDENTS by Sister M. Bonita Willnecker, C.S.A., M.A.

A problem test involving certain Christian social principles was administered to 340 students, and the responses were tabulated and analyzed in order to ascertain the extent to which such factors as age, sex, mental ability, class, and years in a Catholic school have influenced the forming of concepts of Christian so-

cial principles in the minds of the pupils.

Conclusions drawn from this study indicate: (1) Boys and girls differed significantly enough in problem-test scores to assume that the girls apparently have a clearer understanding of Christian social principles. (2) There is no significant difference in the scores obtained by those who attended a Catholic school for many years and those who attended for only a few years. (3) There is no significant difference between class groups and between I.O. groups. (4) Christian social concepts have been developed in the pupils in relation to the family, the Church, the school, the community, and mankind in general.

A COMPARATIVE STUDY OF THE ACADEMIC ACHIEVEMENT OF NATIVE AND TRANSFER STUDENTS IN THE COLLEGE DEPARTMENT OF THE SEMINARY by Reverend Xavier Maudlin, O.S.B., M.A.

Two groups in the college department of a seminary, consisting of 385 students who pursued their high school course at the seminary and 235 from outside high schools, were used in the study. The over-all findings indicate no significant differences in college achievement when the various transfer groups (Catholic high school transfers, public high school transfers, and mixed groups of Catholic and public high school transfers) were compared with students who came from the preparatory seminary. The natives, those from the preparatory seminary, however, did show greater achievement in Latin.

The principal conclusion drawn from this study is that highschool background had not any apparent effect on the academic achievement of students in the college department of the

seminary.

A COMPARATIVE STUDY OF THE FRESHMAN ACHIEVEMENTS OF BOYS IN THE SAME COLLEGE WHO HAVE GRADUATED FROM CATHOLIC COEDUCATIONAL HIGH SCHOOLS AND FROM SECREGATED HIGH Schools by Reverend Roger E. O'Brien, M.A.

The results of this study indicate that there were differences in achievements between the two groups in their freshman year of college but these differences were not sufficiently significant. The study concludes that in this instance the type of high school attended did not produce any real difference in freshman college achievement.

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A COMPARATIVE STUDY OF THE SCHOLASTIC ACHIEVEMENTS OF RESIDENT AND NON-RESIDENT STUDENTS OF SEGREGATED CATHOLIC SCHOOLS FOR GIRLS by Sister Mary Celine Koktan, S.S.N.D., M.A.

Standardized achievement tests in religion, mathematics, language, and reading were given to the two groups of students. Records were made of the results and the two groups were matched according to their freshman I.Q. Critical ratios of the final results were found. The data thus derived seem to warrant the conclusion that the resident students possessed a superior accomplishment in scholastic achievement.

M

THE PERSONAL PROBLEMS OF JAPANESE HIGH SCHOOL STUDENTS AND THEIR IMPLICATION FOR GUIDANCE by Henry Bunji Inomata, M.A.

Almost two thousand students attending four senior high schools in various parts of Japan participated in this study. Essay-type responses were received from the boys and girls to questions posed by the investigator. A total of 2,506 problems were mentioned. When arranged in the descending order of frequency of mention these problems involved: school life (29 per cent), social adjustment, family life, vocational, personal adjustment, health, religious, and financial affairs (1.5 per cent). Almost one-third of the respondents had no source of help for solving their problems. When counseling was available, almost one-half of the group indicated that the members of their family were of help. Friends and teachers were also consulted. The study concludes with the suggestion that a well-organized guidance program be introduced in the Japanese school system to serve the needs of the students in the solution of personal problems.

HIGHER EDUCATION NOTES

Educators should not be burdened with debt, said Archbishop John Mark Gannon of Erie last month in making a donation of \$100,000 to Gannon College. The college is conducting a campaign to raise \$650,000 for a new engineering building. In a letter explaining his gift, Archbishop Gannon wrote: "I realize you are laboring under the pressure of a tremendous debt. Educators should not be burdened with debt. As a consequence I am hereby making you a gift of \$100,000." Though its practical application is felt only by the president of Gannon College, there is no doubt that the Archbishop's theory lightens the debt-burdened hearts of many college administrators.

Tuition increases at Saint Louis University from \$5 to \$25 per semester were announced last month. Effective this fall, semester tuition in most undergraduate colleges of the University will be raised from \$215 to \$240. Highest tuition will be for day students in the School of Law; the charge will go up from \$230 to \$260. Schools not affected by the new rates are the Graduate School, the Schools of Medicine and Dentistry, and Parks College of Aeronautical Technology. Even with these increases, Saint Louis University still charges lower tuition rates than comparable major universities, the announcement stated. Colleges in large urban centers, such as New York and Boston, generally have a charge as high as \$800 a year. Representative private institutions in the Chicago area assess tuition up to \$600 a year.

Saint Louis University's enrollment this spring is 9,625; last spring's total was 8,776. Largest enrollments are recorded in the College of Arts and Sciences, with 1,211 day students and 361 evening students, and in the Graduate School, with 1,021 students. Largest evening enrollment is in the Adult Education Center, with 1,605 students attending classes as compared with 1,015 last year. A total of 1,119 veterans are enrolled as compared with 989 last spring. There are 574 Korean War veterans enrolled this semester, establishing an increase of 25

per cent over last spring's enrollment of 435 such veterans. A decided decrease is recorded in the number of World War II veterans. Fifty foreign countries are represented in the student body of the University, with 180 non-citizen students registered. There are 18 students from countries behind the Iron Curtain and 29 students from China. Last semester, 165 students from 47 foreign countries were enrolled.

Three Catholic colleges become members of the American Association of Colleges for Teacher Education last month, it is announced in the March issue of the Newsletter of the National Commission on Teacher Education and Professional Standards. The colleges are: Marymount, Salina, Kansas; Saint Mary, Xavier, Kansas, and Cardinal Stritch, Milwaukee, Wisconsin. Ten other institutions were made members at the Association's Chicago meeting in February, bringing its total membership to 281 colleges. Developments in the expanding programs of the Association and of the National Commission may be followed through the Newsletter, which is published quarterly and is available without charge on request at the National Commission's office, 1201 Sixteenth Street, N.W., Washington 6, D.C.

Co-operation among Catholic colleges in particular regions is becoming more effective. Philadelphia Catholic college faculties met four times already this year, each time on a different campus, in a project which is expected to make significant contributions to Catholic scholarship, to advance mutual understanding among Catholic college teachers, and to facilitate co-ordination of the efforts of Catholic college administrators to meet the demands for Catholic college education in the Philadelphia area. The series of interfaculty meetings is devoted to discussion of the theme, "The Christian Integration of Knowledge." Interinstitutional co-operation is not new to Philadelphia. For years now, Catholic college presidents and Catholic high school principals have been meeting regularly several times a year to discuss problems of college and high school relations and to provide for a greater in-take by Catholic colleges of Catholic high school graduates.

In the New York area last month, eighteen Catholic colleges and universities participated in a conference on co-operation in research at Fordham University. The conference developed concrete proposals for effective co-operation among the participating institutions. Last month's conference was part of a development which grew out of a preliminary study of co-ordinating research in which the schools were invited to take part by His Eminence Francis Cardinal Spellman, Archbishop of New York.

Kansas Catholic colleges joined together last month, for the second successive year, in distributing 70,000 leaflets outlining the advantages of the State's six Catholic institutions of higher education. This co-operative advertising venture is sponsored and encouraged by the Archbishop and the Bishops of the Province of Kansas City in Kansas.

The Society of Catholic College Teachers of Sacred Doctrine was formed last month at a meeting held at Fordham University. To be affiliated with the National Catholic Educational Association, the goal of the new organization is to encourage further development of instruction in religion and theology in Catholic undergraduate schools and to make available an exchange of religious teaching experiences among the colleges. With an initial membership of forty-seven colleges and universities, the society adopted its provisional constitution and elected the following officers: president, Rev. Eugene M. Burke, C.S.P., of the School of Theology of The Catholic University of America; vice president, Rev. Joseph M. Moffitt, S.J., of Georgetown University; secretary, Sister Rose Eileen, of the Sisters of the Holy Cross, and treasurer, Brother Celestine Luke, of the Christian Brothers.

Keeping the building ball rolling are the following announcements and progress reports. Seton Hall University, South Orange, New Jersey, announced that it has purchased the Elks Building in Paterson, New Jersey, and that it will open a new college there as soon as possible. The new college will be coeducational, with courses in the liberal arts, science, business administration, and secretarial studies. Also from Seton Hall comes news that interested parties have approached University authorities with a proposal to have them start a medical school at the Jersey City Medical Center. No final plan for this project, however, has yet been submitted to the University.

The Sisters of St. Mary will establish a new Catholic college in Dallas. Texas. The Sisters are going to invest \$750,000 in land, buildings, and equipment and move Our Lady of Victory Junior College from Fort Worth to Dallas as a nucleus of the The president of the new college is to be a new institution.

prominent lay educator.

At St. Bonaventure University, construction of a new \$1,725,-000 residence hall has been started. Expected to be completed by November of this year, the new dormitory will mark the second step in the \$8,725,000 expansion program announced three years ago. The first building to be completed was a \$2,500,000 seminary dedicated last November.

The cornerstone of Duquesne University's Assumption Hall, a women's dormitory, was laid on February 7. The building, which will be completed in September, will have facilities for 233 students. It is the second of eight buildings planned in

the University's development program.

Construction is expected to begin soon on Manhatan College's new \$2,000,000 engineering building. Last month the College's Engineers' Society donated \$2,000 toward the project. .

Ground was broken in February for the first of thirteen units in the \$20,000,000 building project of St. John's University, at

Jamaica, Long Island.

Architects for the Pius XII Memorial Library at Saint Louis University, which will house microfilm reproductions of Vatican Library manuscripts, have been chosen and building plans are now being drawn up. The building will house the University's present library holdings in addition to the Knights of Columbus Foundation for the Preservation of Historic Documents at the Vatican Library.

Ground will be broken this July for three new buildings, a classroom building, a science hall, and a dormitory, on the new campus of Assumption College, Worcester, Massachusetts. Last Iune. Assumption's buildings were completely destroyed by a

tornado.

Loyola University of the South, New Orleans, is converting a newly-purchased property, a former bottling plant, into a television studio, which will be euipped for all phases of the medium, including color.

Dr. Leo Francis Stock, one of the nation's top authorities on the history of diplomatic relations between the United States and the Vatican, died in Washington, D.C., last month. Dr. Stock, who was honored in 1952 with the Benemerenti Medal by His Holiness Pope Pius XII, was born in Gettysburg, Pennsylvania. He was educated at Mount St. Mary's College, Emmitsburg, Maryland, and The Catholic University of America, In his career as teacher and historian, Dr. Stock served on the staffs of Pittsburgh College, now Duquesne University, McGill Institution, Mobile, Alabama, The Catholic University of America, and Trinity College, Washington, D.C. From 1910 to 1945, he was also a staff member of the history division of the Carnegie Institute, Washington, D.C. Publications by Dr. Stock include: U.S. Ministers to the Papal States. Consular Relations between the U.S. and the Papal States, and a five-volume historical account on Proceedings and Debates of the British Parliaments Respecting North America.

Harvard's new admissions policy, scheduled for the fall of 1955, provides that unusually able and mature secondary school students will be either admitted to Harvard College after they have completed the eleventh grade or allowed to apply for sophomore standing after completing the twelfth grade in secondary school. To be eligible for sophomore standing, a student will have to qualify for advanced placement in three or more college courses in the fields of biology, chemistry, English, history, languages, mathematics, and physics. Advanced placement will be determined by special tests and by study of the student's secondary record.

Students who want to run for school offices at St. Bonaventure University will have to attend a leadership training program first, the Student Senate there voted last month. The move is part of an over-all plan to train students in practical participation in government.

SECONDARY EDUCATION NOTES

Scholarship opportunities for secondary-school graduates seem to increase every month. At the annual convention of the National Catholic Music Educators Association in Milwaukee, May 16-19, six scholarships in music, totaling \$8,000 in value, will be presented to the winners in the Association's first National Scholarship Contest, three to secondary-school winners and three to college winners. The scholarships are being offered by Catholic colleges and universities; winners may choose from any of the institutions offering the awards.

Marywood College, Scranton, Pennsylvania, is honoring Our Blessed Lady with a special Marian Year Scholarship. Applicants for this four-year, full-tuition grant must be in the upper third of their secondary-school class, recommended by their principal, and offer evidence of their interest in spreading devotion to the Blessed Virgin. They must also take an examination at Marywood, May 1, on the life and apparitions of Mary.

Union Carbide and Carbon Corporation has given eight full-tuition scholarships to Georgetown University and four to the University of Santa Clara. These scholarships are open to deserving students interested in business careers. The purpose of the Corporation's scholarship program is to help assure the availability of larger numbers of trained men and women for future executive and administrative careers in business and industry.

False standards of journalistic practice in Catholic secondary-school publications is the chief reason for the dearth of able Catholic journalists, charged *The La Crosse Register* in an editorial of its February 26 edition. "At the root of [the Catholic secondary schools'] failure to graduate a sufficient number of representative and able lay Catholic journalists," it is stated, "is the abnormal stress in school publications on competitive standards patterned after the style and content of metropolitan secular dailies." Moreover, it is claimed that school press associations foster this abnormal competition, with the result that school publications are nearly always the products of the faculty

rather than the work of the pupils, whose participation is reduced to the tasks of the errand boy and typist. Faculty advisers are too often more interested in the excellence of the final product than in the journalistic training of the pupils.

This year's freshmen were the poorest yet in knowledge they should have acquired in high school, Rev. Oswald J. Marshall, S.J., vice president of the University of Detroit, said in a speech to the University's alumni last month in Toledo, Ohio. And he laid the blame on too much television. Noting that this year's freshmen were just beginning high school when most families were installing television sets, Father Marshall warned that parents must decide how much TV is good for teen-agers if they want them to succeed in school.

Religious communities save \$15,000,00 a year for the Province of Quebec by teaching in the secondary schools there. This declaration was made before the Quebec Royal Commission on Constitutional Matters in a brief presented by the Federation of Alumni of the Secondary Institutions of Classical Studies of Quebec. The brief urged that a more equitable system of grants be arranged to give the classical colleges better assistance. The brief pointed out that within the next ten years these institutions will have to look after a greatly increased enrollment. Moreover, it was stated, that it would not be possible for the religious institutions to provide the necessary increased number of teachers and provisions would have to be made by them for the engaging of lay teachers. Laval University in Quebec petitioned the same Royal Commission for \$12,300,000.

Number of new science teachers needed in secondary schools is expected to rise from 67,000 today to 84,000 by 1960 and to 100,000 by 1966, according to Fletcher G. Watson, of the Harvard Graduate School of Education, in "A Crisis in Science Teaching," Scientific American, CXCII (February, 1954), 27-29. American secondary schools now need 7,000 new science teachers each year, and the supply is diminishing. The number of persons graduated from college has been declining and will not increase greatly during the next few years. The number of graduates qualified for science teaching has declined even more. Last year, fewer than 5,000 were graduated, while 7,000 were needed.

Of those who are graduated, many are lost to industry or the military service. Only about 41 per cent of those qualified are employed as science teachers in the year after graduation. The quality of much of the science teaching is poor, especially in the smaller high schools. This is due to inadequate preparation, lax certification laws, the necessity for assigning teachers prepared in other fields to one or more classes in science, and other causes. The picture presented by the author is indeed dark.

Encouraging Future Scientists, by John H. Woodburn, is a new publication of Future Scientists of America Foundation, 1201 Sixteenth Street, N.W., Washington 6, D.C. It sells for 50 cents and contains information needed to enable high-school science teachers and their students to participate in sponsored incentive programs. It is based on the findings of a survey of 425 science teachers in forty-two states.

Secondary-school "stayins" are the subjects of a survey completed as a doctoral dissertation last year at Indiana University by Russell W. Curtis. Entitled "The Reasons for Staying in School As Given by Seniors of the Seven Indianapolis Public High Schools," the dissertation is abstracted in Studies in Education 1953 ("Thesis Abstract Series," No. 5 [Bloomington, Ind.: School of Education, Indiana University, 1954]), pp. 41-45. In 1950, about 75 per cent of all America's youth in the high-school age group, as compared to about 7 per cent of that group in 1890, were attending high school. But, in spite of increased enrollments, in 1950, American high schools graduated only 61.5 per cent of the class that entered in 1946. Unlike other studies of the high-school retention problem, which are concerned mainly with the reason why pupils drop out, Curtis deals with the reasons why pupils stay in school. His inquiry was made with a special view to the comparative significance of certain "credit" and "noncredit" reasons for staying in school. A bare majority of the 1,803 seniors participating in the study attributed their staying in school to noncredit rather than credit factors.

ELEMENTARY EDUCATION NOTES

Parents should not hesitate to use the word "don't" in dealing with their children, counseled Dr. Donald Bloch in the December, 1953, issue of the National Parent Teacher. Overpermissiveness can be just as harmful as excessive restraint. The child of today needs the ability to get along with others, and he can acquire this skill earlier and to a greater degree if guided by the mature person who loves him.

Adult standards for the child are not out of line if the child is allowed to maintain his self-esteem. Bloch feels that a child who does not have a guiding discipline may feel that his parents do not love or value him enough to protect him. He points out that no child is born with a sense of right and wrong. Some one must develop his conscience for him by providing reasonable rules and counsels. Even though some "don't" commands and an attitude of "It's right, so do it!" may momentarily frustrate the young child, he needs this type of discipline in his early years. Adult-imposed discipline which is firm and warm-hearted and which gradually leads the child to self-discipline is the ideal recommended by Bloch.

Segregation of Puerto Rican pupils for language instruction does not yield maximum scholastic outcomes. Tests recently administered in the elementary schools of New York City under the direction of Irving Lorge of Columbia University have highlighted this fact.

The study, undertaken to determine the best method of adapting Puerto Rican children to life in New York City, produced results which establish that these children learn English more effectively and make better grades in classes where they are placed together with American children than they do in segregated classes. Specifically, the tests show that the Peurto Rican boys and girls in regular classes were better than even superior pupils in vestibule classes. (The latter are classes which hold pupils until their teachers think they have sufficient mastery of English to be transferred to regular classes.)

Interviews with pupils in both the regular and the vestibule

classes disclose that those children who prefer the regular classes believe they learn more in such groupings. Those who expressed a preference for the vestibule classes reported that they are more comfortable speaking Spanish with Puerto Rican children and have more friends who belong to the race, Lorge stated. Lorge also noted that there is a tendency among the Puerto Rican children who attend regular classes to adopt some of the negative attitudes of their classmates toward school, but in the main they have a very favorable attitude toward education.

Relation between perceptions of, and achievement in, school was studied in the eighth grades of the schools of Solvay, New York. All pupils participating in the investigation were tested with three instruments designed to measure their perceptions of school. Two measures of scholastic achievement—end-of-semester grades and standardized-test scores—were also used.

Data collected through these means show significant relationships between measures of perception of school and end-of-semester grades. It is not possible on the basis of evidence yielded to determine cause-and-effect relationships between the two variables, but speculation by the investigator, L. F. Malpass of Southern Illinois University, leads to one of two possibilities. First, the child's low grades might be caused by negative feelings about school. On the other hand, it might be that negative feelings about school are caused by low grades.

There is little or no relationship existing between measures of perception and standardized achievement-test scores. In other words, there is little relationship between how children view their school situation and certain aspects of it and their objectively measured knowledge of arithmetic and reading. Other conclusions of the investigator may be found in the December. 1953, issue of the *Journal of Educational Psychology*, in which Malpass reports his study.

Development of a feeling of security as the first and most important goal in kindergarten education was the consensus of forty kindergarten specialists from fifteen member nations of the United Nations who attended the UNESCO Institute for Education in Hamburg, Germany, last year. While specific problems in the several countries differed, there was general agreement

that the importance of teacher personality and training for kindergarten work could not be ignored. Most delegates to the Institute despaired of kindergartens being properly staffed until various school systems took enough interest in early school education to make the work attractive to capable young people.

Televiewing has no negative effect on free reading habits of intermediate-grade pupils. This conclusion was reached by the directors of a survey (described in the February *Journal of Educational Research*) on the amount of free reading done by intermediate-grade children in homes in which there has been a television set for one year or more in order to discover what the effect of long-time television ownership is upon reading.

Reading averages of the participants ranged in grade level from 3.0 to 9.7. The range of television observation in hours weekly was from three to forty-two. Weekly hours of free reading numbered from two to twenty-four, with a mode between four and five hours. The last named figure indicates that these youngsters spend at least a fair, although perhaps not a desirable, amount of time in free reading. Though correlations among the several variables were not significant, the absence of negative correlations seems to suggest that television has no lasting deleterious influence on reading.

Citizenship for Boys and Girls is a recent release of Science Research Associates, 57 Grand Avenue, Chicago 10. Written for elementary and junior-high-school levels, the booklet aims to develop an understanding of the many facets of good citizenship. It should be helpful in assisting children to realize that citizenship involves duties as well as privileges and that these do not begin at the voting age of twenty-one, but as soon as the individual is old enough to assume responsibility. The booklet costs 40 cents, with discounts for quantity orders.

Retardation in perceptual development was marked in reading disability cases recently studied by James Coleman at the Clinical School of the University of California. Results of the analyses showed that twenty of the forty participating subjects were retarded ten or more months in perceptual development when compared with their age peer group. Further study revealed that the perceptual development of this group lapsed ap-

proximately two and one-fourth years behind the development of general intelligence. It is reasonable to assume that such a marked degree of perceptual retardation would have a significant bearing on the reading disability of these subjects.

Still another trend indicated by the present data is that perceptual retardation is cumulative through the childhood-age group; that is, the older the children get chronologically, the more retarded they become in relation to their ages. However, this trend does not appear to carry through into adulthood.

Coleman suggests several possible reasons for retardation of perceptual development in children. One of these causes calls attention to itself because it is so infrequently considered by educators. It may be that some children become so absorbed in one specific interest (e.g. airplanes, chemistry, etc.), that they pay little attention to other normal objects of interest in their environment. Such an over-focussed interest in one area might well lead to an unequal differentiation of the perceptual field in which a small area becomes highly differentiated while other areas of the field remain relatively unstructured or undifferentiated.

Boys' interest in adventure stories is on the increase according to a report on the 1953 reading programs of 123 Boys' Clubs of America. Boys from ten to sixteen years of age are strongly attracted to adventure stories but they want them with characters which are realistic, and they prefer them written in such a way that they can visualize themselves in the hero's shoes.

With regard to books of a factual nature, it was found that when information was presented clearly and in language which made the subject interesting, boys read books of facts with enjoyment and asked for more. Family stories did not generally appeal to the Boys' Club boys. The boys felt that many of these stories emphasize the family from the girls' point of view and that too much "sameness" appeared in many of the books on family life.

Many boys like to read books in a series. Series of books seem to be especially good for the "one-book boy" since they encourage him to take another book when he turns in the first one.

NEWS FROM THE FIELD

The feat accomplished by the Episcopacy, the clergy, the religious, and the faithful of the United States in providing for all Catholics, especially for children and youth, a solid religious education is truly marvelous and worthy of the greatest admiration and praise, so reads a memorandum sent recently to all the Ordinaries of the United States by The Sacred Congregation of the Council. In a ten-page booklet, the Sacred Congregation appraises the progress of Catholic education in this country as reported by the Ordinaries for the five-year period, 1944-1948. Singular commendation is given to the efforts of parishes and dioceses to provide schools: "With regard to the Catholic schools—the texts, the programs, and the teaching are well done and the time consecrated to religious instruction is adequate, although there is always possibility of improvement particularly in the preparation and formation of teachers of religion, bearing in mind that the fruitfulness of catechising depends in great part on the spiritual formation of the teachers themselves.

"Worthy of the highest interest and of common and concerted efforts is the problem of equiping all the parishes and dioceses with enough schools and colleges to accommodate the great mass of Catholic children and youth. . . . Preoccupation, however, for the Church schools must not lead to forgetfulness and neglect of the religious instruction of those children and youth who do not attend them, but instead it is necessary to be dedicated to this cause with more study and care. . . . One of the greatest impediments to the more general and more fruitful religious instruction of children is, without a doubt, the lack of lay cate-

chists who are well disposed and well prepared."

National organizations promoting Catholic education, the NCEA, NCWC, CCD, and CAC, all are given high praise in the memorandum, a translation of which may be obtained from the National Catholic Welfare Conference, 1312 Massachusetts Avenue, N.W., Washington 5, D.C.

The relationship between school and home will be the object of a workshop for elementary-school teachers at The Catholic University of America, June 11-22. Under the direction of Sister Mary Ramon, O.P., of the Commission on American Citizenship, participants will try to answer the question: How Can the Catholic School Help Restore Christian Family Living? Attention will be focused on the part the teacher can play in bringing about better relationships, particularly through a more appreciative understanding of parents' problems. Elements already in the Commission's curriculum for Catholic schools which are designed to aid in bringing about better home-and-school relationships will be implemented and new techniques for fostering Christian family living will be developed.

Another workshop in the University's June program which is of special interest to elementary-school teachers, as well as high-school teachers, will concern itself with the teaching of creative art to youngsters. Under the direction of Sister Esther Newport, S.P., it will bring together the most outstanding teachers in the field of art education, a field which Pope Pius XII recommended be revived with the Christian spirit.

Catholic, Lutheran and public schools, together with all the major universities and colleges, of Detroit are united in a gigantic educational television project. Channel 56, the station of the Detroit Educational Television Foundation, will have five fixed studios, five permanent remote studios, and one "roving" studio. The University of Detroit's new TV center in its million-dollar library will include two studios, one of them a theatre, with permanent remote control rooms in laboratories and lecture halls. Other institutions in the project are Wayne University, Mercy College, Marygrove College, and the Detroit Institute of Technology. The transmitter and antenna tower will be located at Station WDTR.

The Foundation is asking the people of Detroit to raise \$1,250,000 for the project. Foundation finance chairman is Very Rev. Celestin J. Steiner, S.J., president of the University of Detroit. To date, receipts and pledges amount to \$350,000. Major contributions have been made by the Ford Motor Company (\$125,000), the Fund for Adult Education (\$150,000), and the McGregor Fund (\$50,000). Telecasting over Channel 56 is to begin this fall.

Articles for the UNESCO history of mankind will appear first in a new periodical, Journal of World History, which will allow scholars to evaluate contributions before they are incorporated in the final work. Many interested in the UNESCO project feel that this "testing medium" is a result of the concern religious groups expressed over the manner in which the history might be written, particularly since its editor is an acknowledged agnostic. Evaluating the first issue of the Journal, Rev. W. Eugene Shiels, S.J., chairman of the Department of History at Xavier University, Cincinnati, called its articles "good sound history" and praised a study on "Overseas Missionary Movement from 1300 to 1800" as "a contribution of the finest scholarly medium."

Dr. Shiels called attention to an assurance in the *Journal* by Dr. Paul Carniero, president of the International Commission for the new history, that "no text will be entered into the definitive work until it has first appeared in the quarterly *Journal*, to the end of submitting each section of the history to the previous inspection and free criticism of competent minds among the philosophical and religious currents of our day." Dr. Carniero, a Catholic, noted that "among thousands of United States Catholics there is apprehension over the spirit and plan of the scientific and cultural history of humanity." In response, he outlined the purpose of the new *Journal* as a guarantee of the integrity of the coming history.

Private-school construction continued to show a sharp increase over record 1953 levels during February, U.S. Departments of Labor and Commerce figures released last month show. A 23 per cent rise over February, 1953, to \$38,000,000 marked this February's private-school construction. New public-school building, whose rate of increase had earlier lagged behind that of private schools, appeared to be catching up. Public-school building for February rose 19 per cent over that of last year to \$156,000,000. The combined January-February increase over 1953 was 22 per cent for private schools and 18 per cent for public schools. Private-school building in 1953 totaled \$425,000,000, a 21 per cent increase over the \$351,000,000 of 1952. During World War II years, due to priority regulations, religious building and private-school construction slumped to annual ex-

penditures ranging from \$6,000,000 to \$31,000,000. In 1953, educational construction financed by public funds totaled \$1,742,000,000.

Permitting private schools to exist is not an indulgence on the part of the government but rather a fruitful protection of the free intellectual development of society, Judge Alfred P. Dobson, of Portland, Oregon, said last month when he ordered the Portland public-school authorities to open up their special therapy classes to Catholic-school children. The case involved nine-year-old Patsy Elkins, whose father, William C. Elkins, had asked for the court ruling after his daughter, who had attended therapy classes in lip-reading in 1952, was refused admittance to the special public-school classes in 1953, for the reason that she was a student enrolled in Holy Cross School and was not enrolled as a full-time student in the public schools."

Attorneys for the Portland public-school district have indicated that the case may be appealed to the Oregon Supreme Court. Judge Dobson acknowledged in his written opinion that "inevitably the issue of church-state separation will arise." But he maintained that this case was not similar to cases which hold that such things as free bus transportation for parochial-school pupils violate "constitutional and statutory provisions." The welfare of handicapped children was the "overriding consideration in the case," he said. Then he added that decisions which deny free auxiliary services to parochial-school pupils are by no means unanimous and that the reasoning of those who hold that parochial-school pupils should get such services "is impressive." Moreover, he said that in cases where private-school facilities are inadequate for handicapped children "it does no credit to public-school agencies" to demand that children must either give up parochial-school education, "a substantial tenet of their creed," or be barred from public-school therapy classes. The law so interpreted, he maintained, "ministers to the health and coherence of society, rather than to any divisive or obstructive elements."

BOOK REVIEWS

MEASUREMENT AND EVALUATION IN THE ELEMENTARY SCHOOL (Second Edition) by H. A. Greene, A. N. Jorgensen, and J. R. Gerberich. New York: Longmans, Green and Co., 1953. Pp. xxii + 617. \$5.00.

MEASUREMENT AND EVALUATION IN THE SECONDARY SCHOOL (Second Edition) by H. A. Greene, A. N. Jorgensen, and J. R. Gerberich. New York: Longmans, Green and Co., 1954. Pp.

xxii + 690. \$5.00.

Following the pattern of the previous editions of these works, the two books under review duplicate each other's contents wherever possible, departing from such identity only when there is need to discuss tests in areas which are pertinent to only one of the instructional levels or to discuss particular tests which are scaled to one only of these levels.

The first fourteen chapters are exactly the same in the two books, not only in name but in every detail. They cover the first 391 pages of each volume. These are: Measurement, Evaluation, and the Classroom Teacher; Development of Educational and Mental Measurement; Educational and Mental Measuring Instruments and Techniques; Essential Qualities of a Good Measuring Instrument or Technique; Constructing and Using Standardized Tests; Constructing and Using Oral and Essay Tests; Constructing and Using Informal Objective Tests; Constructing and Using Performance Tests; Constructing and Using Evaluation Tools and Techniques; Using Intelligence and Aptitude Tests; Using Personality Instruments and Techniques; Summarizing the Results of Measurement; Interpreting the Results of Measurement; and, Determining the Relationships among the Results of Measurement.

The remaining chapters in each book are devoted to tests in the various subjects. They contain a great deal more than information about tests. For instance, in the text intended for use in the elementary-school testing program, Chapter 15, called "Measuring and Evaluating in the Receptive Language Arts," we find six subheadings: importance of listening and reading as receptive language skills, identification of factors affecting listening and reading, determination of reading readiness, measuring oral reading and listening comprehension, analysis and diagnosis

in silent reading, and corrective exercises in reading.

Other areas covered in the text for teachers in elementary schools are: expressive language arts, social studies, mathematics, science, fine arts, health and physical education, and general educational achievement. The volume on secondary-school testing includes these and, in addition, chapters on foreign languages, industrial and practical arts, and business education.

The authors have made every effort to make their presentation clear to the student being introduced to the field of measurement for the first time. Their books are profusely illustrated with materials duplicated from actual samples of tests under discussion at any point. There are forty-eight tables and thirty-one figures in the text for the elementary-school level; forty-seven tables and thirty-one figures in the other. The teacher's work is facilitated by lists of topics for discussion at the end of each chapter and an extensive up-to-date bibliography for each.

This reviewer is of the opinion that in attempting so much the authors have found themselves constrained to treat some topics somewhat superficially, or with simplifications which may tend to leave the student confused when he comes into contact with usages which are quite common though at variance with those presented in the text. One instance of this may be the introduction of z-scores, on page 349. One paragraph completes the discussion of the standard score. In it we read: "However, the z-score is a measure used primarily in statistical procedures and has very little direct significance for the interpretation of

test results to the teacher."

Similarly, if the *T*-score is to be introduced at all, ought not the student be warned that quite frequently other types of scores than that obtain by the authors' formula are called by the same name?

However, no book can be perfect in the eyes of everyone. The authors of the works under review have done a good service to students of measurement in education and for teachers as well. These books are recommended as appearing to be very good for introductory courses in educational tests and measurements.

F. J. HOULAHAN.

Department of Education, The Catholic University of America. Sociology by George A. Lundberg, Clarence C. Schrag, and Otto N.Larsen. New York: Harper & Brothers, 1954. Pp. xxviii + 740. \$6.00.

In many ways this new introductory sociology text is an excellent book. The style is simple and clear. Maps, graphs, tables, and illustrations are used very liberally and very intelligently. Excerpts from newspapers and popular magazines appear side by side with quotations from scholarly journals and monographs, so that the tone never becomes dull. Every chapter ends with a list of films that can be used to ilustrate its content. The book is not very profound and makes no great intellectual demands on either student or instructor, but it is easy to study and easy to teach. It is a relatively painless introduction to the science of society. Doubtless it will have a very wide circulation.

It is too bad that this book which has so much in its favor should be, in a certain sense, intellectually dishonest. It is dishonest in that it professes to give a purely scientific account of human society, whereas actually it contains a good many of its authors' speculations, interpretations, and beliefs that have no direct connection with science. For example, the reader is told that "as science advances" it can abandon such words as "mind" and the like in explaining "the symbolic or language behavior of man" (p. 567). The second chapter of Genesis is one of the "mythical or legendary accounts" such as "most people have within their folklore" (p. 506). Morality is referred to customs, often reinforced by such "traditions" as "reports of the Immaculate Conception and the birth of Christ, his life among the saints and sinners, and his crucifixion and ascension"; such traditions "tend to produce in the individual a feeling of obligation, a sense of right and wrong, and of moral virtue" (p. 188). All religious behavior represents an emotional attitude toward the mysteries and perplexities of life (p. 554), and the principal function of religion "is to provide a certain much desired peace of mind" (p. 572).

The clear implication of the book is that "science" somehow backs up the authors in their speculations on such topics as the existence of the human mind, the nature of morality, and the origin and function of religion. Naturally the authors do not at-

tempt the impossible task of showing that their speculations are based on the proved facts of empirical science: if they did so, the weakness of their case would be clearly apparent. What they actually do is to mix proved facts and their unproved speculations together in such a way that the immature student will find it hard to tell where one type of material leaves off and the other begins. Such a student may easily be deceived into accepting the Lundbergian philosophy under the false impression that it has somehow been scientifically proved. It is no exaggeration to call this textbook an intellectually dishonest presentation.

PAUL HANLY FURFEY.

Department of Sociology, The Catholic University of America.

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PSYCHOLOGY OF ADOLESCENCE (Fourth Edition) by Luella Cole. New York: Rinehart and Company, Inc., 1954. Pp. xvi + 712. \$6.00.

The previous editions of this book have always seemed to this reviewer to be amongst the best available in the field. However, the field of adolescent psychology is one which does not at all stand still. As the author remarks in her Preface, the present revision differs from its predecessors in the substitution of more recent or more complete studies for such studies as have become outdated. It also includes more interpretation of data. A chapter on personality has been added. Otherwise, the organization of this fourth edition is that which appeared in other editions: an Introduction, followed by several "Parts"—(1) Physical Development, (2) Emotional Development, (3) Social Development, (4) Moral Development, and (5) Intellectual Development—and a Conclusion.

Although there are evidences of a more psychoanalytic interpretation of materials than previously, as the author claims, the amount of it is scarcely sufficient to detract from the value of the book. After giving a summary of the psychoanalytic theory of development, on page 132, the author continues: "It should be pointed out that thus far there is relatively little objective proof of the above theory of development." It appears that she is content to let people know what the Freudian ideas are on cer-

tain questions and to continue to use intelligent interpretation of data instead. After all, what is there of value in "psychoanalytic theory" beyond the pornographic vocabulary? And that must be a "value" for many since it is quite obvious that without it there is little left, that is, little that isn't common knowledge.

So far as this reviewer is concerned, Cole's *Psychology of Adolescence* in its fourth edition is a modernization and enlargement of excellent antecedents.

F. J. HOULAHAN.

Department of Education, The Catholic University of America.

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FORTITUDE AND TEMPERANCE by Josef Pieper. Translated by Daniel F. Coogan. New York: Pantheon Books, Inc., 1954. Pp. 128. \$2.75.

Most of us, I dare say, share the opinion that the cardinal virtues have not been receiving the attention that they deserve in view of their relation to Christian perfection, the immediate end of Catholic education. We are aware of the teaching of St. Thomas that these are virtues in an absolute sense in that they perfect the will and render the possessor wholly good, whereas the intellectual virtues (to which so much time is devoted) are virtues in a relative sense in that they perfect us only in part, that is, in relation to the intellect. And so we keep hoping that somone will turn up with a better plan for teaching and training for moral perfection.

Please don't misunderstand. This book does not offer such a plan, nor was it written especially for the classroom, although it might well be added to the supplementary reading list in our Catholic colleges.

Teachers should find it helpful, perhaps as a prelude to a first-hand acquaintance with St. Thomas' treatment of the third and fourth of the cardinal virtues.

The author disclaims originality and tells us that his book "contains not a single sentence that could not be documented from the works of St. Thomas." His volume is not, however, a dry commentary on St. Thomas. It is quite readable, considering the abstract nature of virtue itself. An effort has been made

to reach the modern man who has such distorted notions of these virtues and to awaken an appreciation for them as St. Thomas and the Scholastics understood them. Their beauty and attractiveness will be a revelation to many a reader.

Let us hope that Fortitude and Temperance will be widely read so that its author may be encouraged to follow it up with Prudence and Justice. We should be thinking in terms of these virtues, not only for their individual worth, but for the protection they afford to Charity which is the essence of Christian perfection and the proximate end of Catholic education.

B. T. RATTIGAN.

Department of Education, The Catholic University of America.

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Public School Administration by Calvin Grieder and William E. Rosenstengel. New York: Ronald Press Co., 1954. Pp. xii + 622. \$6.00.

This work is designed to serve as a text for college and university students who are preparing to become school superintendents or teachers and as a day-to-day guide for administrators in the field. It has eight parts organized for the typical introductory course in school administration. With supplementation, the book can be extended to serve as a text in more advanced courses covering this subject in greater detail. Carefully phrased topics for study and discussion are included with each chapter to provide the student with further applications of the principles and to direct him in more detailed exploration of the material.

It is hard to write anything new in a book of this sort. The particular value of this work lies in its orderly arangement of topics, up-to-date sources, and graphic exhibits.

I. A. GORHAM.

Department of Education,
The Catholic University of America.

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Educational

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Deferrari, Roy J. (ed.). Latin and Religion Syllabi in the Minor Seminary. Washington, D.C.: Catholic University of America Press. Pp. 82. \$1.75.

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Regnery Co. Pp. 210. \$4.00.



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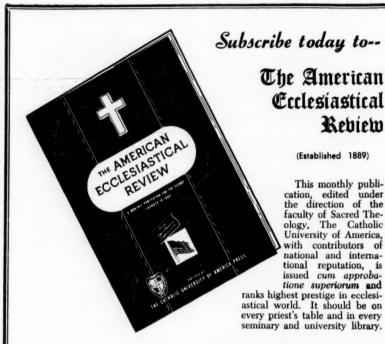
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